U. S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
ENVIRONMENTAL DATA SERVICE

KEY TO METEOROLOGICAL RECORDS DOCUMENTATION NO. 5.38

CATALOGUE OF METEOROLOGICAL SATELLITE DATA—TIROS VIII TELEVISION CLOUD PHOTOGRAPHY

Part 3

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PURPOSE

The Key To Meteorological Records Documentation Series has been established to provide guidance information to research personnel making use of climatological data.

Frequently users of such data have found it necessary to spend a great deal of time establishing whether the criteria for observing or computing various elements have changed over the period of record or in what form the data are available.

It is therefore hoped that the presentation of this series may not only conserve valuable time but may have a direct influence in improving the accuracy of research results.

PREFACE

This bulletin is the third of a series describing the television cloud photographs obtained by the TIROS VIII meteorological satellite. It contains a listing of the cloud photograph sequences taken during the period from January 1, 1965 to August 31, 1965, together with a set of maps showing, as available, a schematic nephanalysis for each sequence. It also describes how copies of these photographs may be obtained from the National Weather Records Center. Any future catalogue of TIROS VIII data will contain only the listing of the cloud photography sequences.

Documentation Section
National Environmental Satellite Center

EARLIER TIROS DATA CATALOGUES

Catalogues of earlier TIROS Meteorological Satellite data are available in this series, as follows:

No. 5.31 "Catalogue of Meteorological Satellite Data - TIROS I Television Cloud Photography", published in 1961, price 70 cents.

No. 5.32 "Catalogue of Meteorological Satellite Data - TIROS II Television Cloud Photography", published in 1963, price 20 cents.

No. 5.33 "Catalogue of Meteorological Satellite Data - TIROS III Television Cloud Photography", published in 1962, price 70 cents.

No. 5.34 "Catalogue of Meteorological Satellite Data - TIROS IV Television Cloud Photography", published in 1963, price $1.00.

No. 5.35 "Catalogue of Meteorological Satellite Data - TIROS V Television Cloud Photography", published in 1964, price $1.75.

No. 5.36 "Catalogue of Meteorological Satellite Data - TIROS VI Television Cloud Photography", published in 1964, price $2.00.

No. 5.37 "Catalogue of Meteorological Satellite Data - TIROS VII Television Cloud Photography Part 1 June 19, 1963 to December 31, 1963", published in 1965, price $1.25.

No. 5.37 "Catalogue of Meteorological Satellite Data - TIROS VII Television Cloud Photography Part 2 January 1, 1964 to June 30, 1964", published in 1965, price $1.00.

No. 5.37 "Catalogue of Meteorological Satellite Data - TIROS VII Television Cloud Photography Part 3 July 1, 1964 to December 31, 1964", published in 1965, price $1.00.

No. 5.38 "Catalogue of Meteorological Satellite Data - TIROS VIII Television Cloud Photography Part 1 December 21, 1963 to June 30, 1964", published in 1965, price $1.00.

No. 5.38 "Catalogue of Meteorological Satellite Data - TIROS VIII Television Cloud Photography Part 2 July 1, 1964 to December 31, 1964", published in 1965, price $1.00.

No. 5.39 "Catalogue of Meteorological Satellite Data - TIROS IX Television Cloud Photography Part 1 January 22, 1965 to April 30, 1965", in press.

CATALOGUE OF METEOROLOGICAL SATELLITE DATA
TIROS VIII TELEVISION CLOUD PHOTOGRAPHY
PART 3 - January 1, 1965
to August 31, 1965

The TIROS VIII meteorological satellite was launched on December 21, 1963 by the National Aeronautics and Space Administration. It performed satisfactorily through 1965 and on December 31, 1965 was still producing meteorologically usable pictures. Beginning early in 1965, however, TIROS VIII was programed, in general, to take only those picture sequences required to supplement the photographic coverage being acquired by other satellites in the series. Engineering checks only of this satellite are planned for 1966. However, operationally useful pictures can be programed and taken with TIROS VIII if needed.

Traveling in a nearly circular orbit, TIROS VIII averaged about 392 nautical miles above the earth's surface with a difference of 27 nautical miles between apogee and perigee. It had an orbital period of 99.5 minutes which corresponds to fourteen and a fraction passes around the earth each day. The orbit was inclined at an angle of 58.5° to the earth's equatorial plane and thus picture coverage was obtained only in the zone bounded roughly by 65°N. and S. latitude.

The satellite was spinning at a rate that varied between 8 and 12 rpm. Being spin-stabilized, the spin axis orientation in space changed only gradually during its operational lifetime. The cameras, mounted with their optical axes parallel to the spin axis, were able to view the earth during less than half of each orbital pass. Usable picture coverage was thus restricted to the portion of each orbital pass during which the underlying earth was both sunlit and within view of the cameras.

TIROS VIII was equipped with two camera systems, one of which (Camera 1) was a recording television system similar to those on earlier satellites in the TIROS series. The other (Camera 2) was a newly developed automatic picture transmission (APT) system which was being flight tested. Each camera had a wide-angle lens which viewed an area about 750 miles square when the optical axis was normal to the earth's surface. At other times a larger area was viewed in oblique perspective.

The APT system (Camera 2) was a slow scan television system which took pictures automatically and transmitted them immediately to appropriately equipped ground stations. The APT experiment, in which some 50 stations throughout the world participated, was terminated by the end of April 1964.

The descriptions and tabulated listings of cloud picture sequences which follow pertain only to the camera 1 television recording system.

Camera 1 action aboard TIROS VIII was controlled for the most part from three Command-and-Data-Acquisition (CDA) stations: one located at Wallops Station near Chincoteague, Va.; one at Pacific Missile Range, Point Mugu, Calif.; and the other at Gilmore Creek, Fairbanks, Alaska. The station at Point Mugu, Calif. ceased operation after April 13, 1965. The satellite came within radio range of one or more of these stations for a few minutes each on 8 or sometimes 9 of its 14 daily passes. During these radio contacts the CDA station could:

1. receive a series of television pictures directly as they were taken, if it was daytime and the optical axes were appropriately oriented;
2. command the Camera 1 system to take pictures remote from the CDA station after a specified time delay and store them on tape aboard the satellite;
3. play back a previously commanded tape sequence.

Pictures received by the direct mode were taken only over the United States and nearby ocean areas, while tape sequences usually show other parts of the world. In the region

traversed during the five or six consecutive passes when the satellite could not be contacted, picture coverage was limited to one tape sequence each day.

Tape pictures were obtained in sequences up to 32 frames each. Direct sequences were usually shorter and more variable in length. Occasionally the direct pictures obtained at one station on one pass may be grouped into two sequences if the series was interrupted to permit playback of a tape sequence. The time interval between frames was either 10 or 30 seconds in most direct sequences, and was always 30 seconds in tape sequences.

The pictures are virtually square with some small distortion resulting from the particular setting of the electronic readout equipment. "Fiducial marks" etched on the face of the vidicon tube appear in the picture image as a central cross and four L-shaped corners, although they may show poorly or not at all against a dark background.

Since the satellite was spinning, the earth's image rotates from frame to frame by an amount that depends on how much the satellite's spin rate departed from being an integral number of rotations during the picture-taking interval. The rotation rate may be considered constant during any one sequence. The center of rotation, which is the point where the optical and spin axes intersect the image plane, is not quite at the central fiducial cross mark, being displaced slightly to the lower right on tape pictures and to the upper left on direct pictures. Copies of the focus sheets which show its location with respect to the fiducial marks may be obtained from the Documentation Section, National Environmental Satellite Center. Reproductions of the focus sheets are also included on the microfilms of latitude-longitude overlay grids.

Cloud picture transmissions received at CDA stations were displayed on a television screen and simultaneously recorded on magnetic tape. A 35 mm. camera photographed the television screen, including also a lighted panel board mounted underneath. The panel board information provides a legend for each picture including camera number, mode (TAPE or DIRECT), frame number, orbital pass number, and station initial preceded by "VIII" for TIROS VIII. Occasionally a clock appears in the legend but the time shown has no relation to picture taking time.

In the example of figure 1, the legend indicates the picture was received and taken on orbital pass number 10,000 and that it is a TAPE picture taken by camera 1. The letter G at right center following the number "VIII" indicates the picture was acquired at the Gilmore Creek, Fairbanks, Alaska station.

The panel board legend also contains a series of numerals whose sum indicates the frame number. In figure 1, the frame number is 6, representing the sum of 2 and 4. (At the bottom of the panel board is a similar series of numerals intended to give information on sun angle, but the system did not work properly and the values cannot be easily interpreted.) Within each sequence, the indicated frame numbers increase in the order that the pictures were received at the CDA station. For direct mode this is the time order in which the pictures were taken. But tape sequences were played back to the station in reverse time order. Pictures of both modes are arranged on the film in order of increasing frame number; therefore it is important to note that this arrangement is correct time order for direct sequences, but is reverse time order for tapes.

The orderly time sequence of pictures is sometimes interrupted by spurious noise frames or complicated by skipped frames. In such cases the frame numbers are not a dependable indicator of real picture counts. However, the regular rotation of image orientation is often a helpful clue in determining the actual time interval between particular frames.

The following pages of maps and tabulated listings give descriptive information about the pictures obtained by TIROS VIII. In the listings each picture sequence is described by one line, and for each station the sequences are listed in the order in which they appear on the film reel. The column headings and entries have the following meanings:

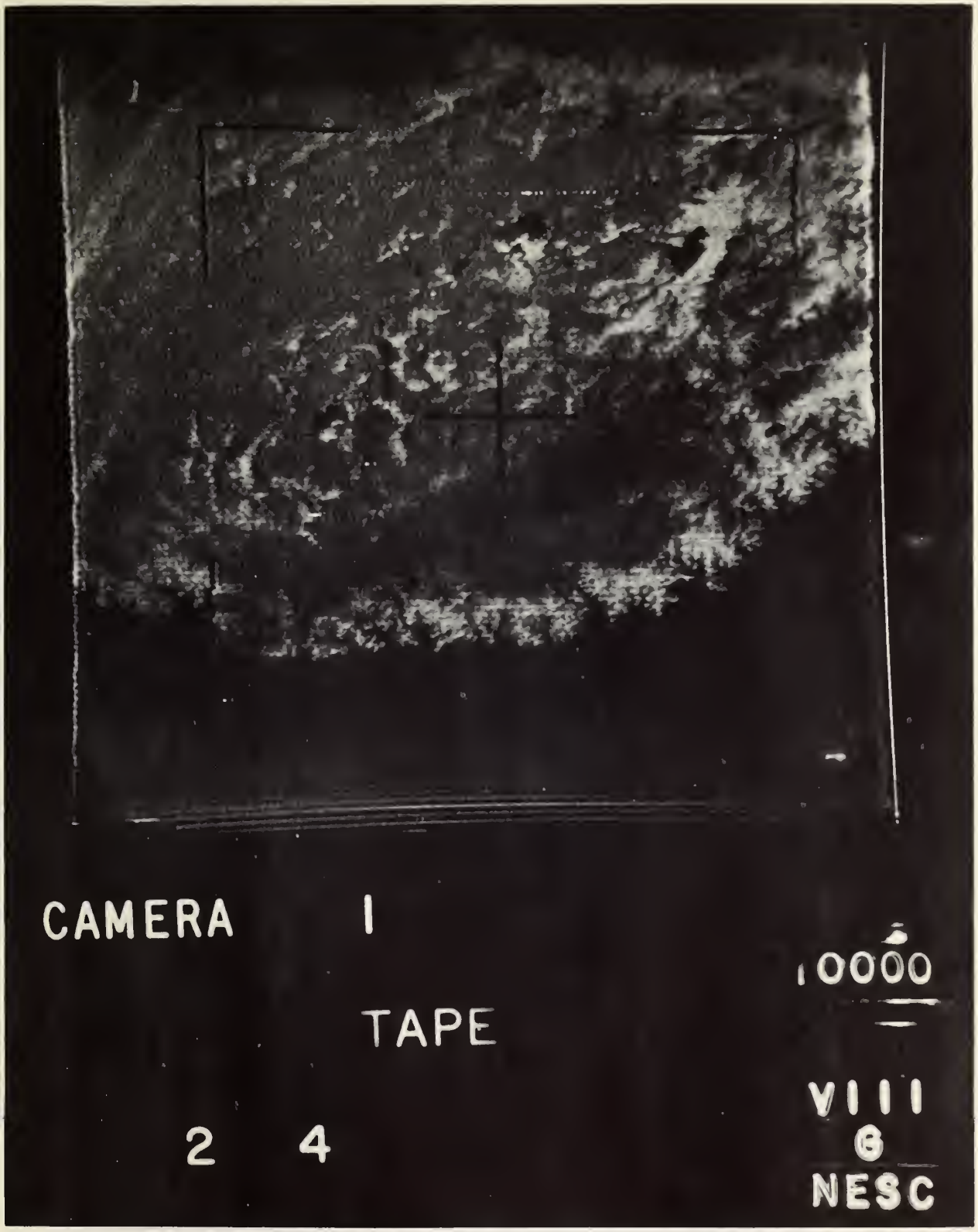

Figure 1 - Example of TIROS VIII Cloud Photography

REEL: Number of the film reel which contains the sequence.

FILM LEGEND: This section gives the information actually appearing on the film in the panel board legend accompanying each picture. This information is used to identify the sequence on the film reel.

PASS: Orbital pass number on which the pictures were read out, as indicated in the upper right corner of the legend.

M: Mode of transmission indicated in the legend.

D = Direct

T = Tape

C: Camera number indicated in the legend.

1 = Camera number one

S: CDA station which received the sequence.

W = Wallops Station, Va.

P = Point Mugu, (Pacific Missile Range), Calif.

F = Fairbanks, Alaska (Gilmore Creek)

NOTE: After July 30, 1965 operational use of the satellite data was transferred from the CDA stations to the National Environmental Satellite Center at Suitland, Md. An "N" was used to identify the Satellite Center and appears in the listing after that date. However, the picture transmissions are still received at the CDA stations and the appropriate identifying letter appears on the film.

PICTURE SEQUENCE DATA: This section documents the picture content. Sequences having no usable frames or unknown times are on the film reel and are therefore included in the listings, but are not fully documented in this section.

PASS: Orbital pass number on which the first picture of the sequence was taken. For direct sequences this pass number and the readout pass number given under FILM LEGEND are the same. For tape sequences, however, picture taking usually began on an earlier pass.

DATE: Month and day of the middle frame of the sequence.

TIME: Approximate time, in hours and minutes (GMT) of the midpoint in the sequence. This time is also given with the nephanalysis on the coverage map.

FRAME:

TI: Time interval, in seconds, between frames. V indicates time interval varies within the sequence.

US: Number of usable frames in the sequence.

+: Number of frames in which the central fiducial cross mark appears on the earth, indicating that the earth's image occupies a substantial portion of the picture.

GEOGRAPHICAL AREA COVERED: Column headings refer to numbered areas outlined on the first map. Column entries indicate the areas included in the picture sequence.

METEOROLOGICAL AND OTHER FEATURES:

EXTRATROPICAL CIRCULATIONS - TABLE (1)

0. CLOUD VORTEX (Well Defined)
1. CLOUD VORTEX (Poorly Defined)
2. CLOUD VORTEX (With Frontal Band or Other Associated Band(s))
3. CLOUD VORTEX (WITH DOUBLE CENTER)
4. CIRCULATION CENTER
5.
6.
7.
8.
9. CLOUD VORTEX (Unusual Appearance)

TROPICAL DISTURBANCES - TABLE (2)

0. Hurricane or TYPHOON (Named)
1. Tropical STORM (Named)
2. CLOUD VORTEX (Well Defined)
3. CLOUD VORTEX (Poorly Defined)
4. DISTURBED AREA (2° or less in extent)
5. DISTURBED AREA (2° to 4° in extent)
6. DISTURBED AREA (Over 4° in extent)
7. ASYMPTOTES OF CONVERGENCE
8. APPARENT ITC ZONE
9.

BANDS - TABLE (3)

0. PROBABLE FRONT (Well Defined)
1. PROBABLE FRONT (Poorly Defined)
2. APPARENT OCCLUDED FRONT
3. APPARENT STABLE OR OPEN WAVE
4. PROBABLE FRONT (With Cloud Vortex)
5. BAND, LOW LATITUDE (Within 15° of the Equator)
6. BAND, HIGH THIN CLOUDS (Possible Jet Association)
7. PRESUMED NON-FRONTAL
8.
9. BAND OF UNUSUAL APPEARANCE

CLOUD FEATURES - TABLE (4)

0. SOLID CELLS (Random)*
1. SOLID CELLS (Organized Pattern)*
2. HOLLOW POLYGONAL OR CRESCENT PATTERN*
3. VERMICULATED CLOUD PATTERN*
4. COASTAL STRATUS
5. INLAND STRATUS OR FOG (Including Penetrating Coastal Stratus)
6. CLOUD STREETS (Extratropical)
7. CLOUD STREETS (Tropical)
8.
9.

*0, 1, 2 and 3 refer to homogeneous cloud field greater than 3° of great circle arc in diameter.

CLOUD FEATURES - TABLE (5)

0. CUMULONIMBUS (No Apparent Organization)
1. CB's or Other Evidence of Violent Weather over the United States
2. CB's in Apparent Squall Lines
3. EDDY PATTERNS
4. VORTICAL PATTERN IN A CELLULAR FIELD
5. MOUNTAIN WAVE CLOUDS
6. APPARENT GRAVITY WAVES (Not Obviously Associated with Terrain)
7.
8.
9. UNUSUAL CLOUD CONFIGURATION

MISCELLANEOUS - TABLE (6)

0. ICE OR SNOW (Glacial)
1. SNOW (Non-Mountainous)
2. SNOW (Mountain)
3. ICE ON SEAS
4. ICE ON LAKES OR RIVERS
5. SUN GLINT
6. HAZE OR SMOG
7. PROBABLE CONTRAILS
8. LANDMARK OF EXCEPTIONAL QUALITY
9. LANDMARK, DISCERNIBLE

Following the listings is a series of maps showing the area covered by each sequence having usable frames and for which picture taking time has been determined. Most of the picture sequences were analyzed for their cloud content during routine operations, and these nephanalyses have been reproduced on the maps. When no nephanalysis for a usable sequence was available, and the area covered by the photographs could be reasonably determined, a generalized outline is shown instead. Maps showing nephanalyses and areas where pictures were taken are contained in this catalogue through April 1965. After April, because of the complete overlap of TIROS VIII by TIROS IX, preparation of routine operational nephanalyses from TIROS VIII pictures was discontinued. With complete photographic coverage available from TIROS IX, only the listing of the cloud photograph sequences will be catalogued for TIROS VIII after April 30, 1965. Satellite attitude and exposure time are not always accurately known at the time the nephanalyses are constructed. However, most of the nephanalyses are considered to be geographically accurate to about $\pm$ 2° with a few ranging from $\pm$ 1° to $\pm$ 5°. Users are cautioned not to attribute any greater accuracy to the location of cloud patterns shown.

The symbols used in the nephanalyses are defined by the following legend:

CUMULOFORM CLOUD

STRATIFORM CLOUD

CIRROFORM CLOUD

APPARENT CUGG OR CB

BOUNDARY OF MAJOR CLOUD SYSTEMS - FRONTS, VORTICES, OR OTHER SYSTEM DOMINATING THE SCENE VIEWED BY THE SATELLITE

DEFINITE BOUNDARY OF MORE OR LESS UNORGANIZED CLOUD MASSES

INDEFINITE BOUNDARIES OF MORE OR LESS UNORGANIZED CLOUD MASSES

STRIATIONS

STRIATIONS, TENUOUS

CLOUD LINES

CLOUD LINES, TENUOUS - CLOUD FORM DENOTED BY

DIRECTION OF SHEAR OF CIRRUS - FROM CB ANVIL OR OTHER SOURCE

WAVE CLOUDS (MOUNTAIN OR TRANSVERSE)

ESTIMATED LOCATION OF JET STREAM - SHAFT MAY BE BROKEN TO AVOID OBSCURING SYMBOLS INSIDE NEPH BOUNDARY

VORTEX

HEAVY

THIN

CLOUD AMOUNT

OPEN (O)	=	$<$ 20% coverage
MOSTLY OPEN (MOP)	=	20-50% coverage
MOSTLY COVERED (MCO)	=	50-80% coverage
COVERED (C)	=	$>$ 80% coverage

NOTE: STIPPLING WILL BE USED TO EMPHASIZE THE AREAS CONSIDERED BY THE ANALYST TO BE OF GREATEST SYNOPTIC SIGNIFICANCE.

The coverage swaths are grouped by PASS DAY, which includes all sequences taken on or near the series of 8 or 9 consecutive passes that come within range of the CDA stations each 24-hour period. These passes may fall on one or on two calendar days, and the maps are dated accordingly. Tape swaths are identified by the readout pass number, followed by the picture-taking pass number. Direct swaths are identified by a single pass number and the letter D. Midpoint time is given for all swaths, and camera number is added when necessary to identify definitely the sequence to which the swath applies. Two direct sequences acquired at the same station on the same pass are normally combined in one swath, since the short interruption for tape playback usually does not cause a significant gap in the coverage.

TIROS VIII master films will be deposited at the National Weather Records Center (NWRC), Environmental Science Services Administration, Federal Building, Asheville, North Carolina. Persons or institutions desiring copies may order them from NWRC in the form of 35 mm. positive transparencies for projection or 35 mm. duplication negatives from which opaque prints can be made. The pictures are stored chronologically on 100-foot reels. Orders must be placed for one or more complete reels, at a cost of $6.50 each, as it is not now possible to furnish copies of individual frames or to provide enlargements or other picture formats. All copies will be furnished with sprocket holes, since the necessary film emulsion is available only in this form.

Geographic locator grids, for overlay on the pictures, were computed in the routine preparation of TIROS VIII nephanalyses. Microfilm copies of these grids, which have latitude and longitude lines spaced at 5° intervals, are available from NWRC. The individual nephanalyses will also be available on microfilm.

Information as to satellite location, attitude, picture-taking time, and other data useful in determining the location of TIROS VIII pictures more precisely is available from the Documentation Section, National Environmental Satellite Center.

Detailed descriptions of the problems and uncertainties encountered in geographically locating TIROS pictures are contained in References 1 and 2. Reference 3, on the other hand, describes a meticulous hand-rectification method which will produce excellent location information.

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1. Hubert L. F.: "TIROS I Camera Attitude Data, Analysis of Location Errors, and Derivation of Correction for Calibration", Meteorological Satellite Laboratory Report No. 5, U. S. Weather Bureau, Washington, D. C., 1961.

2. Pyle, R. L. : "Documentation for TIROS IV Television Data", Meteorological Satellite Laboratory Report No. 16, U. S. Weather Bureau, Washington, D. C., 1963.

3. Fujita, T. : "A Technique For Precise Analysis For Satellite Data; Volume I - Photogrammetry", Meteorological Satellite Laboratory Report No. 14, U. S. Weather Bureau, Washington, D. C. 1963.

| REEL | FILM LEGEND | | | | PICTURE SEQUENCE DATA | | | |

REEL	FILM LEGEND				PICTURE SEQUENCE DATA																
					PICTURE TAKING			FRAME			GEOGRAPHICAL AREA COVERED	METEOROLOGICAL AND OTHER FEATURES									
						MIDPOINT						EXTROP CIRC	TROP DISTURB	BANDS	CLOUD FEATURES		MISCEL-LANEOUS				
	PASS	M	C	S	PASS	DATE	TIME	TI	US	+	0 1 2 3 4 5 6 7 8 9	TABLE (1)	TABLE (2)	TABLE (3)	TABLE (4)	TABLE (5)	TABLE (6)				
823A	5860	T	1	W	5859	0128	1409	30	32	32	2 4										
823A	5860	D	1	W	5860	0128	1541	30	08	08	4 7						814				
823A	5862	T	1	P	5861	0128	1725	30	32	32	45 78		68		7	2	9				
823A	5862	D	1	P	5862	0128	1900	30	06	06	5 7	10		1	5		9				
823A	5871	T	1	P	5864	0128	2225	30	32	32	1 5		8	1	17	0					
824A	5874	T	1	W	5873	0129		30	31	31											
824A	5877	T	1	P	5876	0129	1818	30	32	32	1 5 7		8	16		25	9				
824A	5883	T	1	W	5879	0129	2314	30	32	32	3 5										
824A	5886	T	1	P	5885	0130	0929	30	08	08	01										
824A	5889	T	1	W	5888	0130	1409	30	32	32	2 4 7										
824A	5891	T	1	P	5890	0130	1748	30	17	07	2 8			0			9				
824A	5899	T	1	P	5893	0130	2226	30	32	32	1 5				2						
824A	5902	T	1	W	5901	0131	1142	30	32	32	2 4 6										
824A	5905	T	1	P	5904	0131	1656	30	09	08	2 8										
824A	5912	T	1	W	5907	0131	2138	30	32	32	1 5										
824A	5917	T	1	W	5916	0201	1232	30	32	32	4 7										
824A	5917	D	1	W	5917	0201	1403	10	29	29											
824A	5920	T	1	P	5919	0201	1730	30	31	31	1 5 7	4	38	6	457		92				
824A	5929	T	1	P	5921	0201	2049	30	32	32	1 5		8	1	670						
824A	5931	T	1	W	5930	0202	1142	30	32	32	2 4 6										
824A	5932	T	1	F	5931	0202		30	23	23											
824A	5933	T	1	P	5932	0202	1503	30	32	32	4 78		8	16	7		29				
825A	5934	T	1	P	5933	0202	1640	30	32	32	5 78	4	8	6	457	2	29				
825A	5934	D	1	P	5934	0202	1814	30	06	06	5	4		0							
825A	5941	T	1	W	5936	0202	2123	30	32	32											
825A	5942	T	1	P	5941	0203	0613	30	25	16	01	2		0	02						
825A	5943	T	1	P	5942	0203	0735	30	32	32	1 6		8		70	0	9				
825A	5946	T	1	W	5945	0203	1234	30	32	32	2 4 8										
825A	5948	T	1	F	5946	0203	1413	30	32	32											
825A	5956	T	1	W	5950	0203	2058	30	08	32	1 5										
825A	5960	T	1	F	5956	0204	0647	30	32	32	1 34										
825A	5974	T	1	F	5970	0205	0558	30	32	32	3 6										
825A	5984	T	1	W	5976	0205	1555	30	32	32	1 5 78						9				
825A	5990	T	1	F	5996	0206	0829	30	32	32											
825A	5998	T	1	W	5992	0206	1836	30	32	28	1										
825A	6000	T	1	P	5999	0207	0601	30	32	32	1 3 6		48	6	7	0	8				
825A	6004	T	1	F	6002	0207		30	32	32											
825A	6012	T	1	W	6006	0207	1748	30	32	28	1	0									
825A	6014	T	1	P	6013	0208	0513	30	32	32	1 3 6		8	1	7	0	8				
826A	6017	T	1	W	6016	0208	1821	30	32	29	2										
826A	6029	T	1	P	6022	0208	2018	30	31	31	01	2			6						
826A	6032	T	1	F	6031	0209	1112	30	32	32											
826A	6034	T	1	P	6033	0209	1420	30	32	32	2 8						9				
826A	6043	T	1	P	6036	0209	1919	30	32	32	1 5	4	8	1	67						
826A	6057	T	1	P	6048	0210	1625	30	32	27	0 2 8	42		0	026		93				
826A	6058	T	1	P	6051	0211	0608	30	32	32	1 6	42	8	0	67	0	9				
826A	6060	T	1	F	6059	0211	0927	30	31	31											
826A	6062	T	1	F	6061	0211	1357	30	31	31											
826A	6072	T	1	P	6071	0212	0533	30	32	30	01	42		40	06	3	3				
826A	6074	T	1	F	6073	0212	0851	30	32	32											
826A	6076	T	1	P	6074	0212	1032	30	32	27	012	24		34	16						
826A	6077	T	1	P	6076	0212	1351	30	32	27	0 2				6						
826A	6086	T	1	P	6077	0212	1530	30	32	29	012 8	2		0	6	3	92				
826A	6088	T	1	F				30	32	32											
827A	6090	T	1	P	6088	0213	0943	30	32	28	012	2		0	602	3					
827A	6100	T	1	P	6090	0213	1301	30	30	24	01	14		1	6	3					
827A	6102	T	1	F	6100	0214	0537	30	31	31											
827A	6104	T	1	F	6102	0214	0856	30	29	29											
827A	6106	T	1	F	6104	0214	1215	30	28	28											
827A	6112	T	1	W	6108	0214	1851	30	26	24	012										
827A	6114	T	1	W	6113	0215	0308	30	22	22	1										
827A	6115	T	1	P	6114	0215	0450	30	32	22	01	02		4	62		0				
827A	6117	T	1	F	6115	0215	0629	30	25	25											
827A	6118	T	1	F	6117	0215	0947	30	24	24											
827A	6127	T	1	W	6120	0215	1445	30	32	26	1										
827A	6129	T	1	P	6128	0216	0358	30	32	30	01	2		4			0				
827A	6131	T	1	F	6130	0216	0715	30	31	31											
827A	6134	T	1	F	6132	0216	1036	30	30	30											
827A	6141	T	1	W	6135	0216	1533	30	32	31	12										
827A	6145	T	1	F	6142	0217	0301	30	32	32											
828A	6148	T	1	F	6146	0217	0939	30	32	30											
828A	6156	T	1	W	6149	0217	1445	30	32	32	12 8										
828A	6163	T	1	P	6161	0218	1038	30	32	32	012		41		01	6		03			
828A	6170	T	1	W	6164	0218	1536	30	32	32	12										
828A	6174	T	1	F	6171	0219		30	31	31											
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828A	6190	T	1	F	6188	0220	0714	30	30	30											
828A	6198	T	1	W	6191	0220	1220	30	31	31	012										
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| REEL | FILM LEGEND | PICTURE SEQUENCE DATA | | |

| REEL | FILM LEGEND | | | | PICTURE SEQUENCE DATA | | | |

| REEL | FILM LEGEND | PICTURE SEQUENCE DATA | | |

| REEL | FILM LEGEND | PICTURE SEQUENCE DATA | | |

| REEL | FILM LEGEND | PICTURE SEQUENCE DATA | | |

REEL	FILM LEGEND				PICTURE SEQUENCE DATA																					
					PICTURE TAKING			FRAME			GEOGRAPHICAL AREA COVERED										METEOROLOGICAL AND OTHER FEATURES					
						MIDPOINT															EXTROP CIRC	TROP DISTURB	BANDS	CLOUD FEATURES		MISCEL-LANEOUS
	PASS	M	C	S	PASS	DATE	TIME	TI	US	+	0	1	2	3	4	5	6	7	8	9	TABLE (1)	TABLE (2)	TABLE (3)	TABLE (4)	TABLE (5)	TABLE (6)
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856A	8595	T	1	N	8591	0805	0148	30	32	32																
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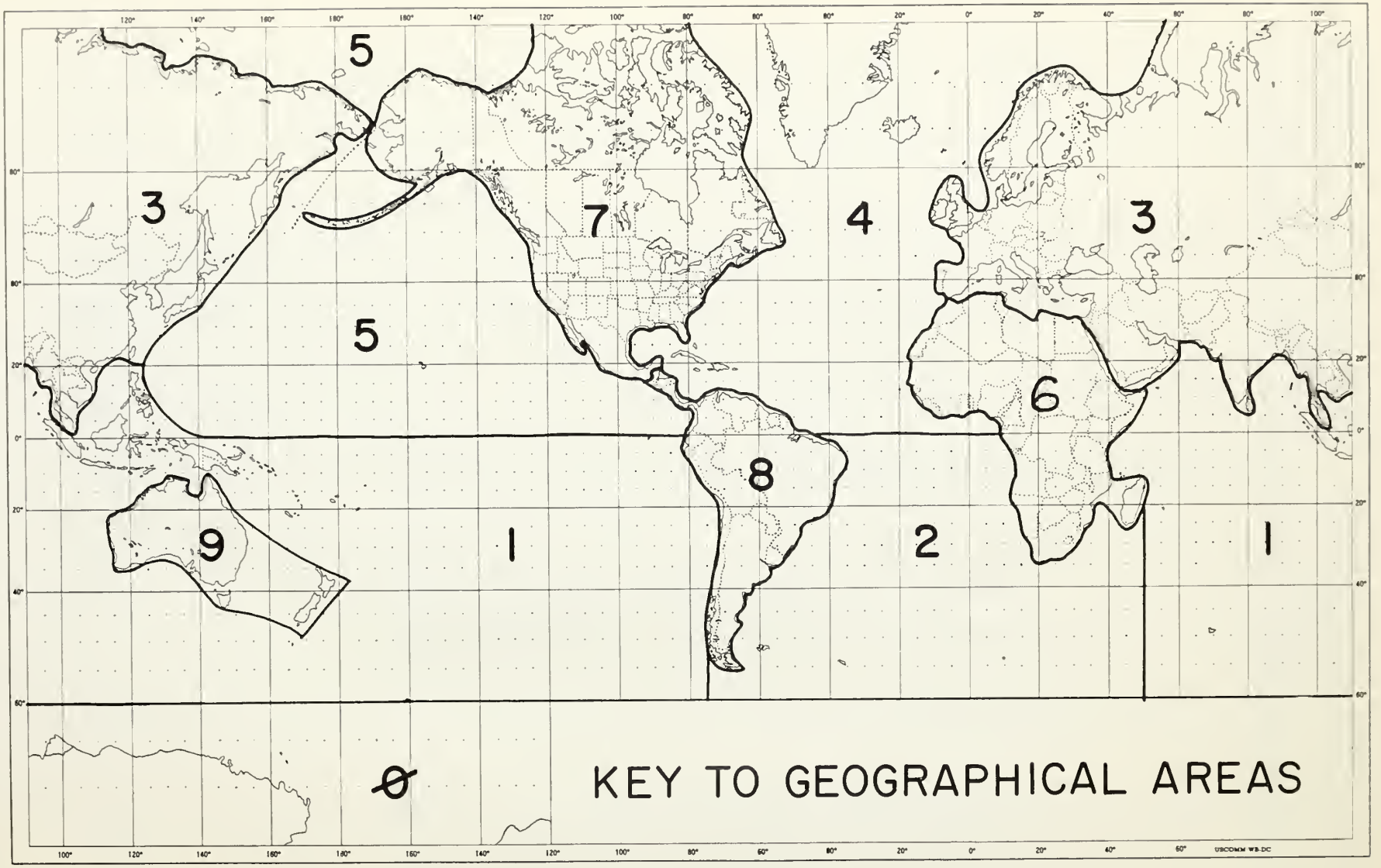
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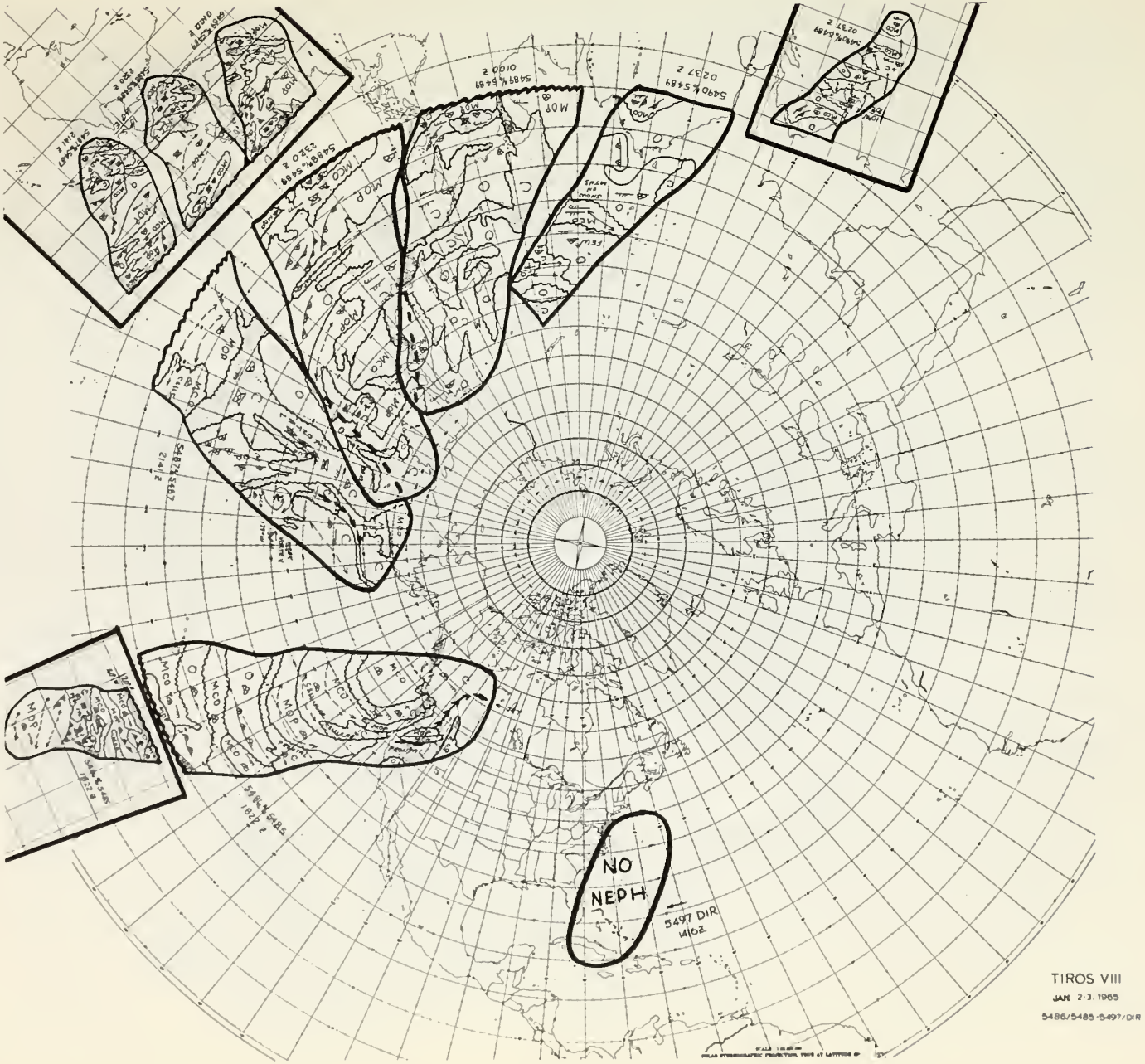
KEY TO GEOGRAPHICAL AREAS



TIROS VIII

JAN 2-3, 1965

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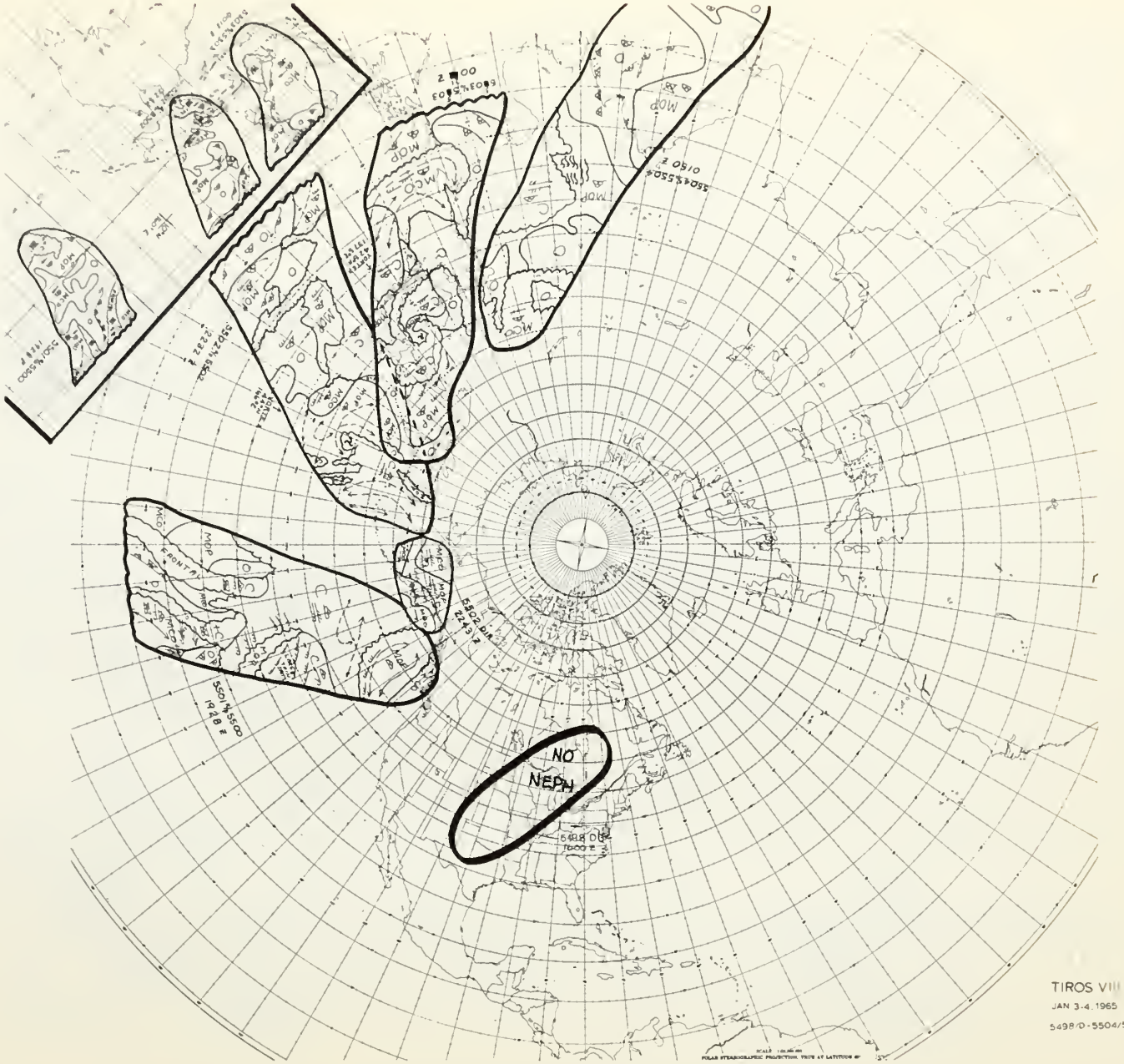

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JAN 3-4, 1965
5498/D-5504/5504

TIROS VIII
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MCO
MOD
MOP
FRONTAL
DBL
ITC
5527 DIR
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5 JAN. 63

TIROS VIII
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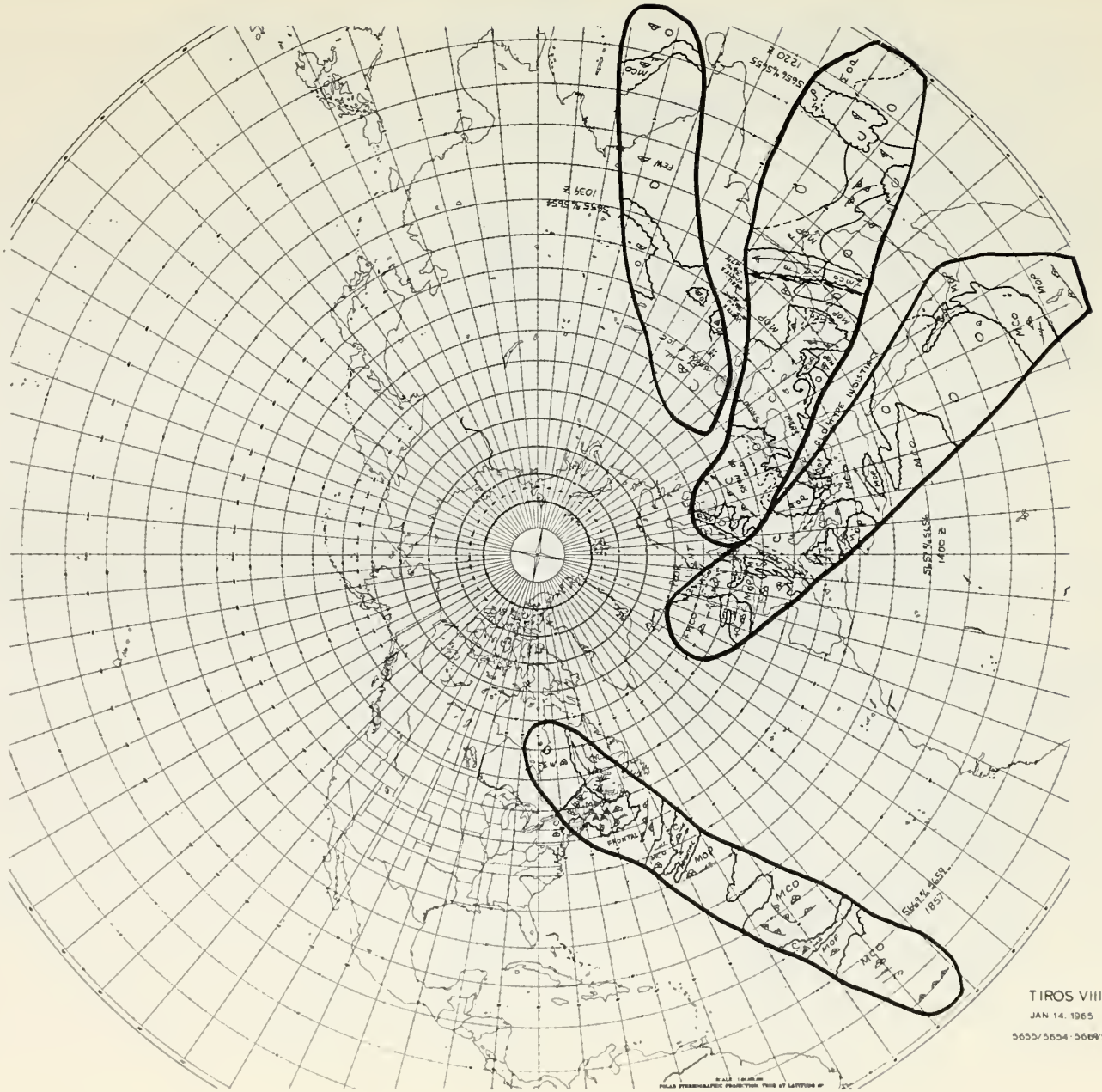
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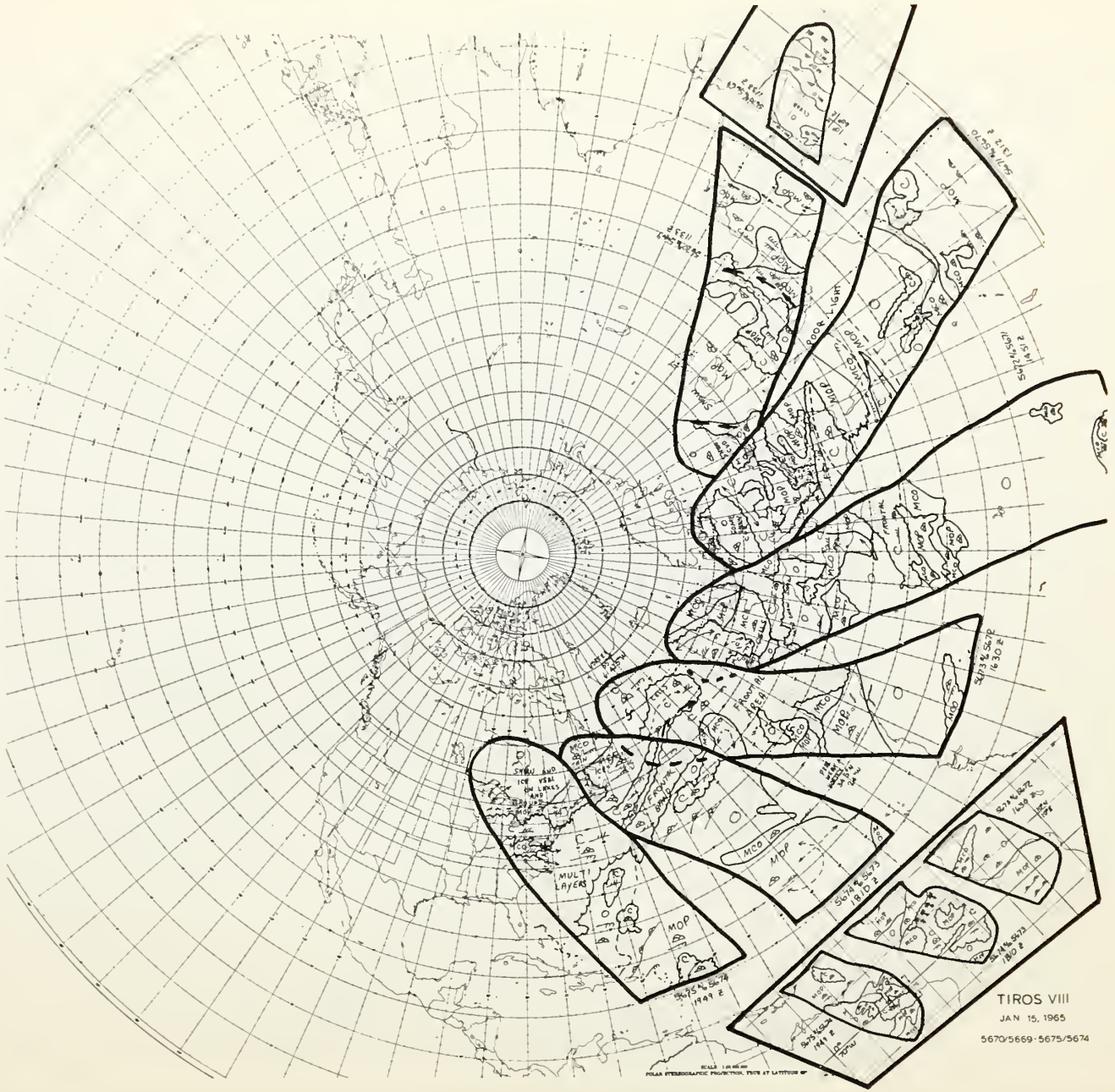
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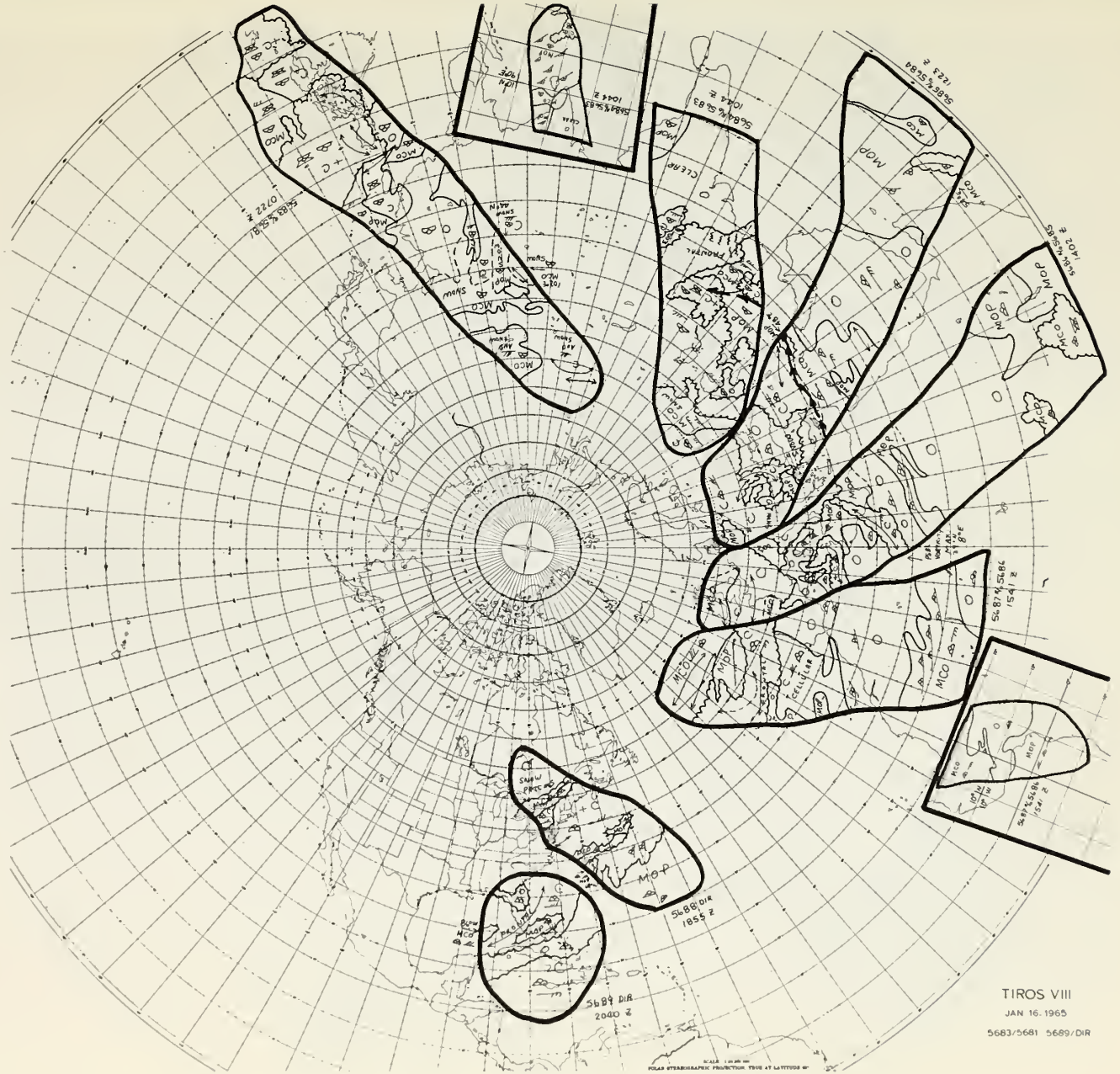
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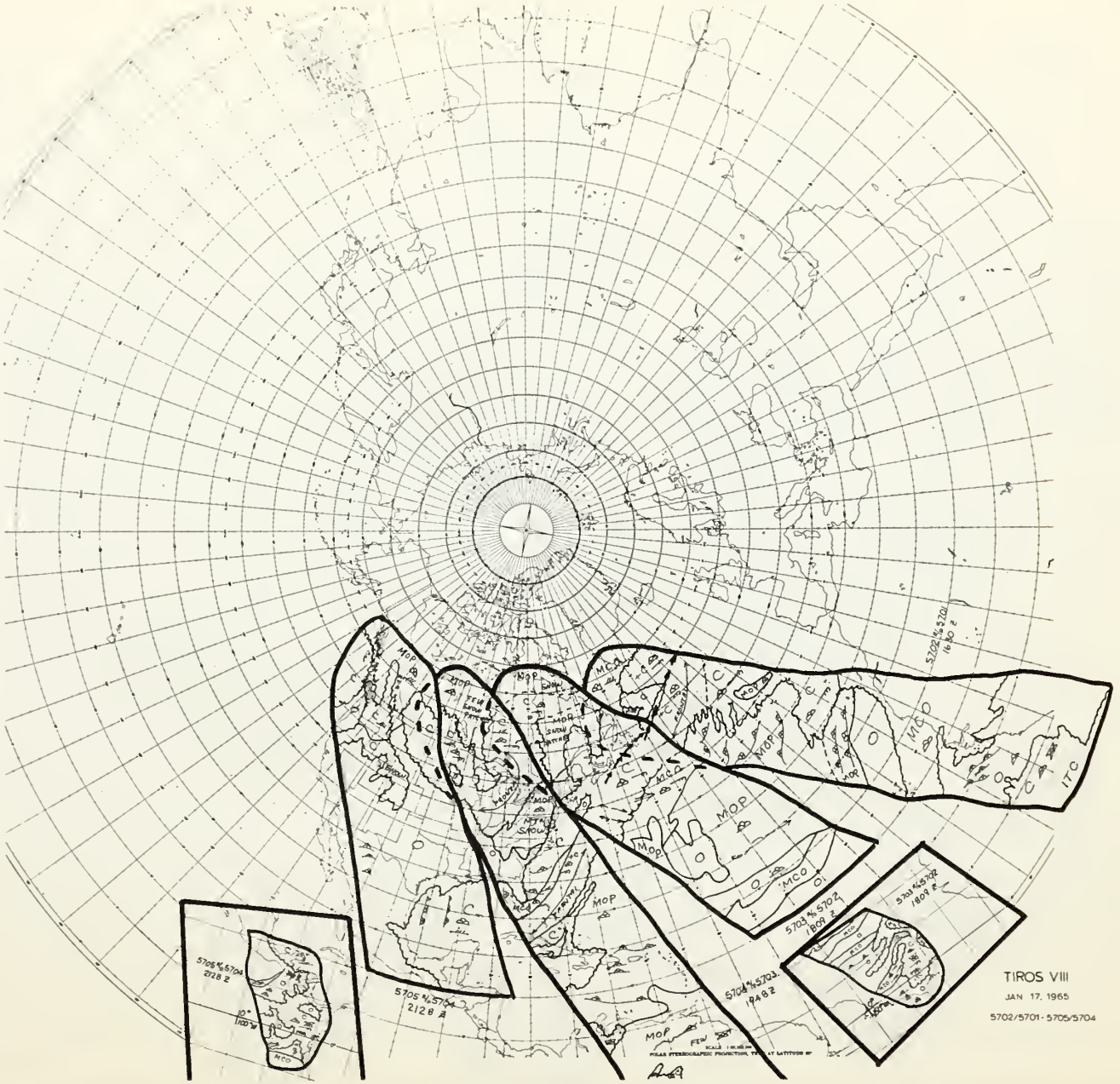
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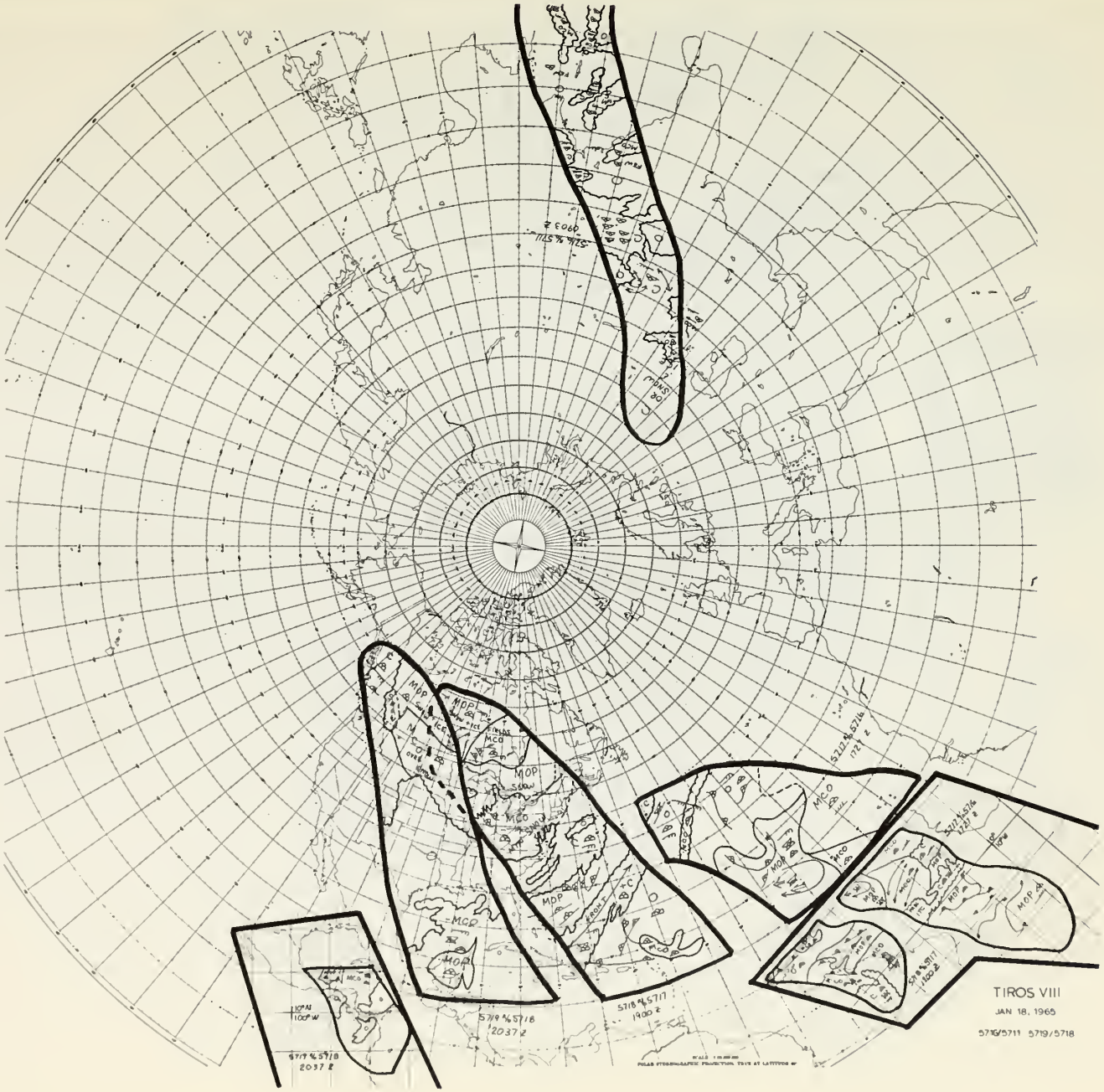
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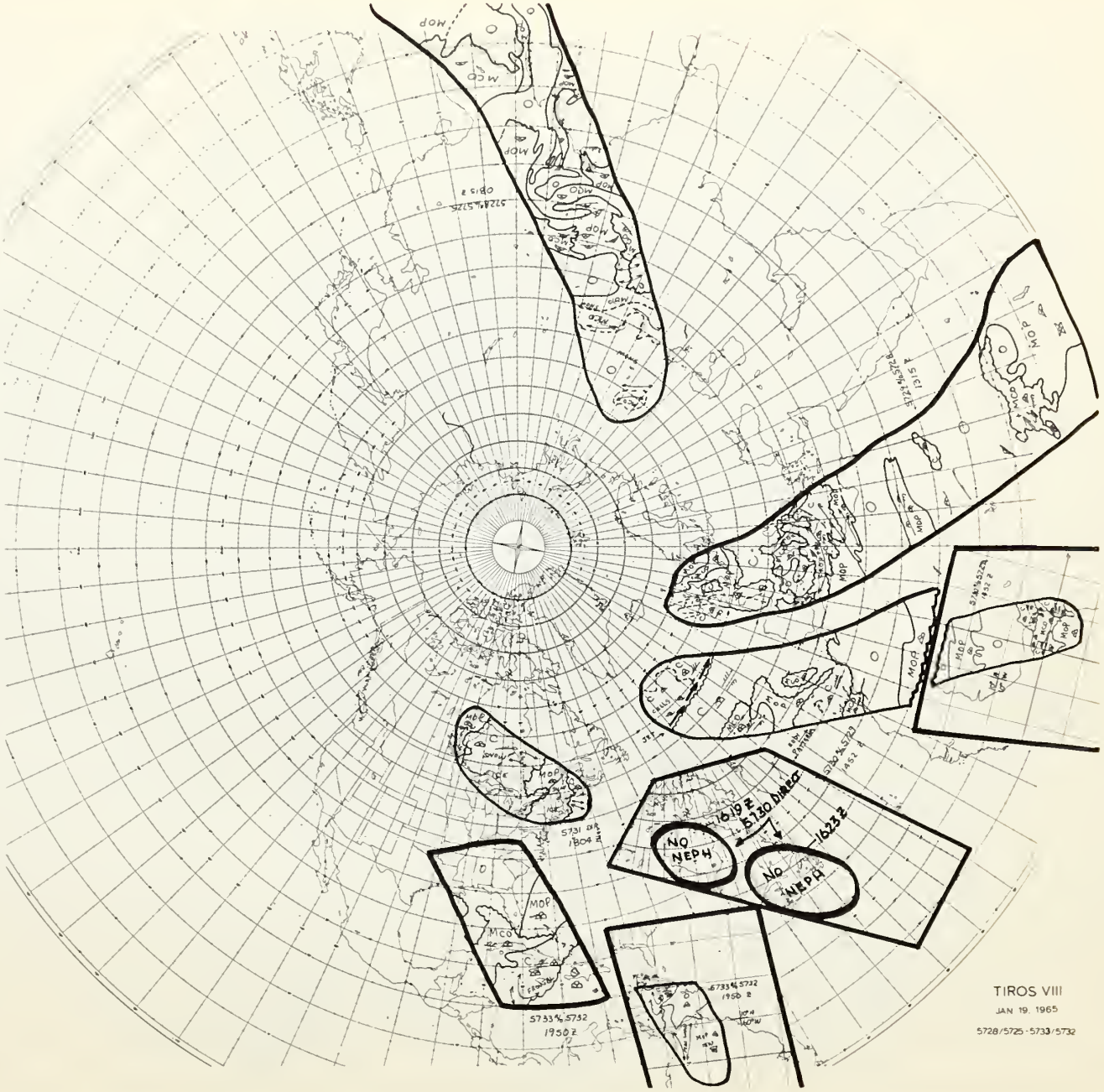
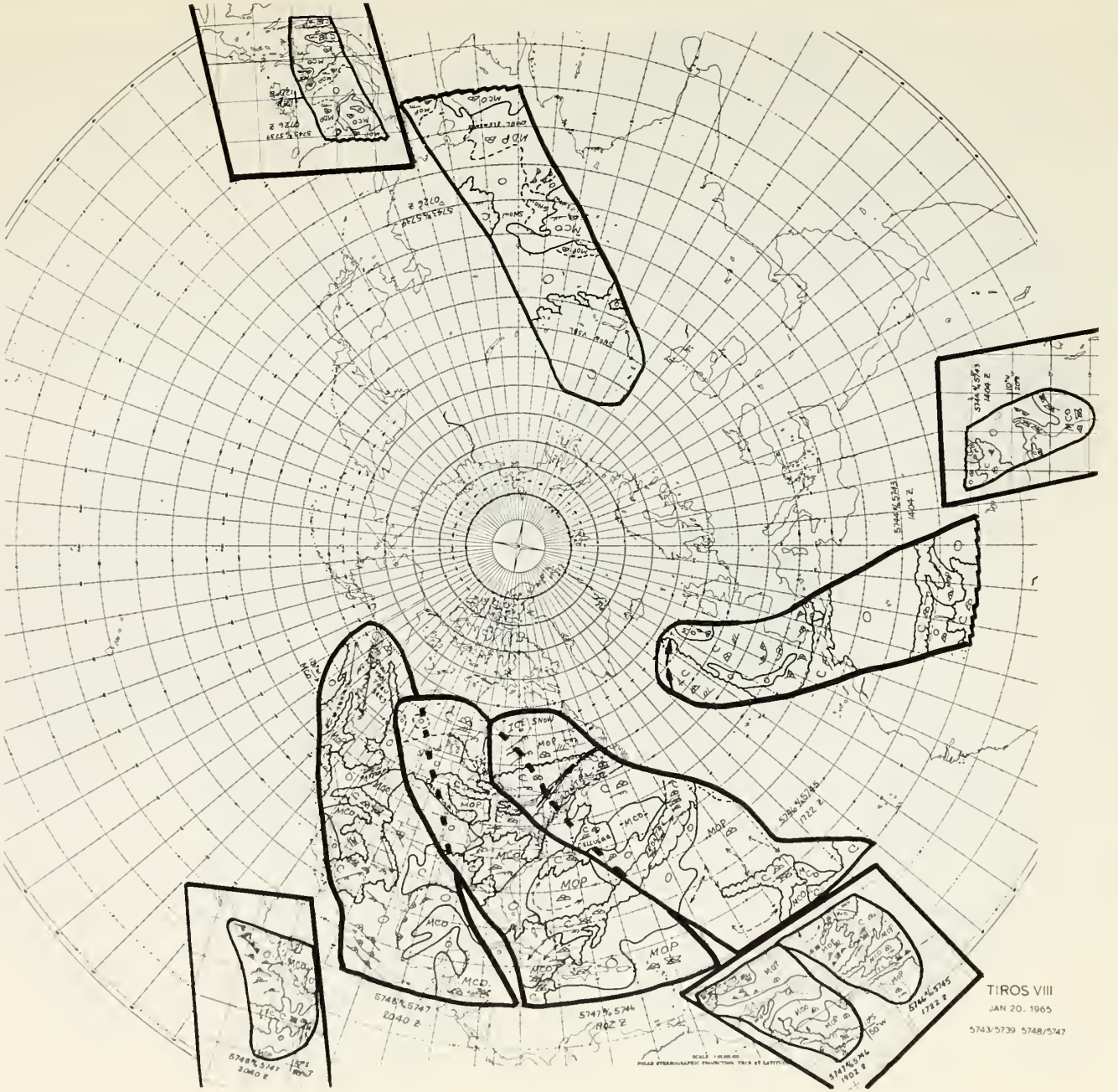


TIROS VIII

JAN. 19, 1965

5728/5725 - 5733/5732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5743/5739 5748/5747

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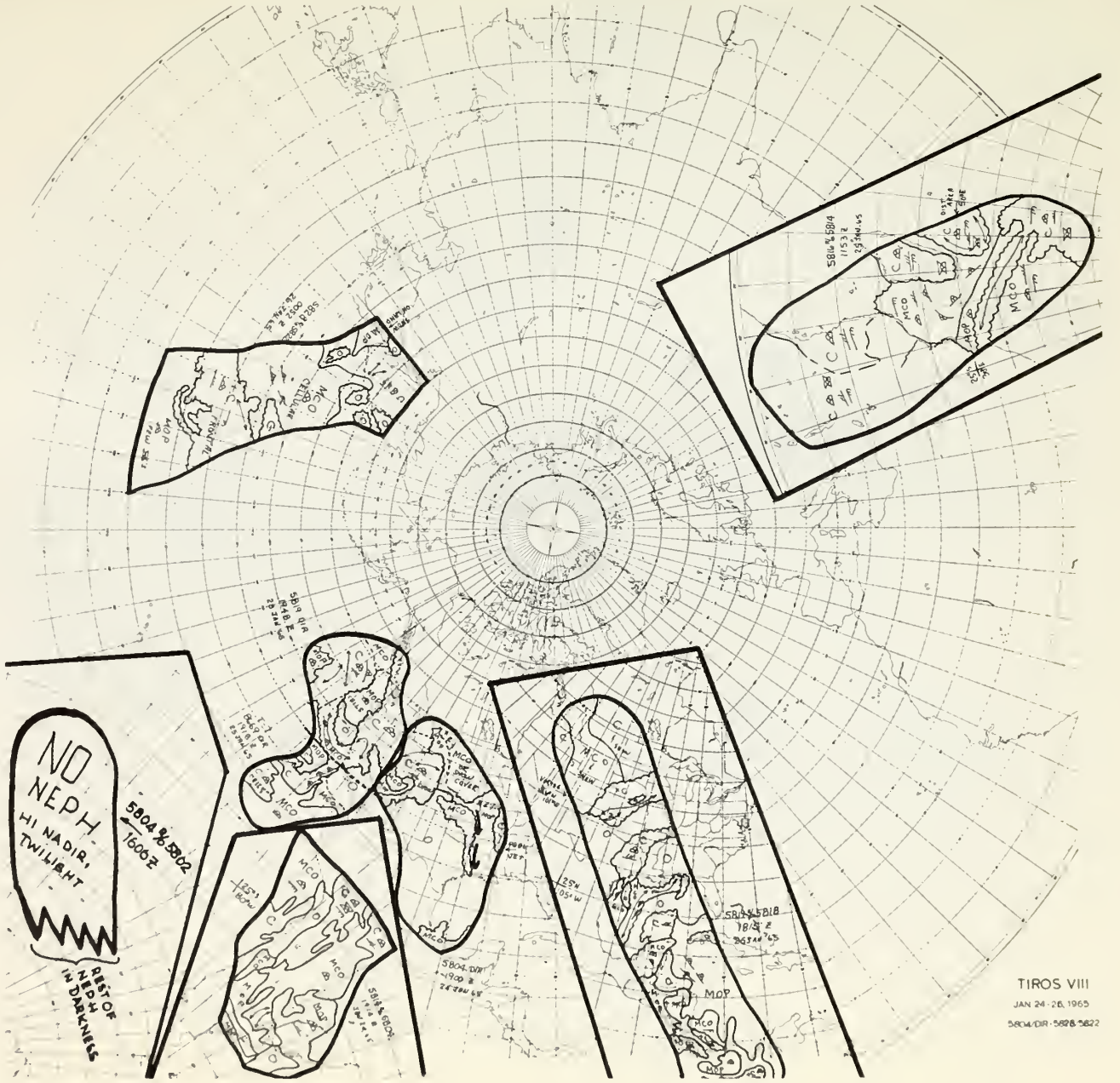
JAN 21, 1965
5755/5753 · 5761/5760



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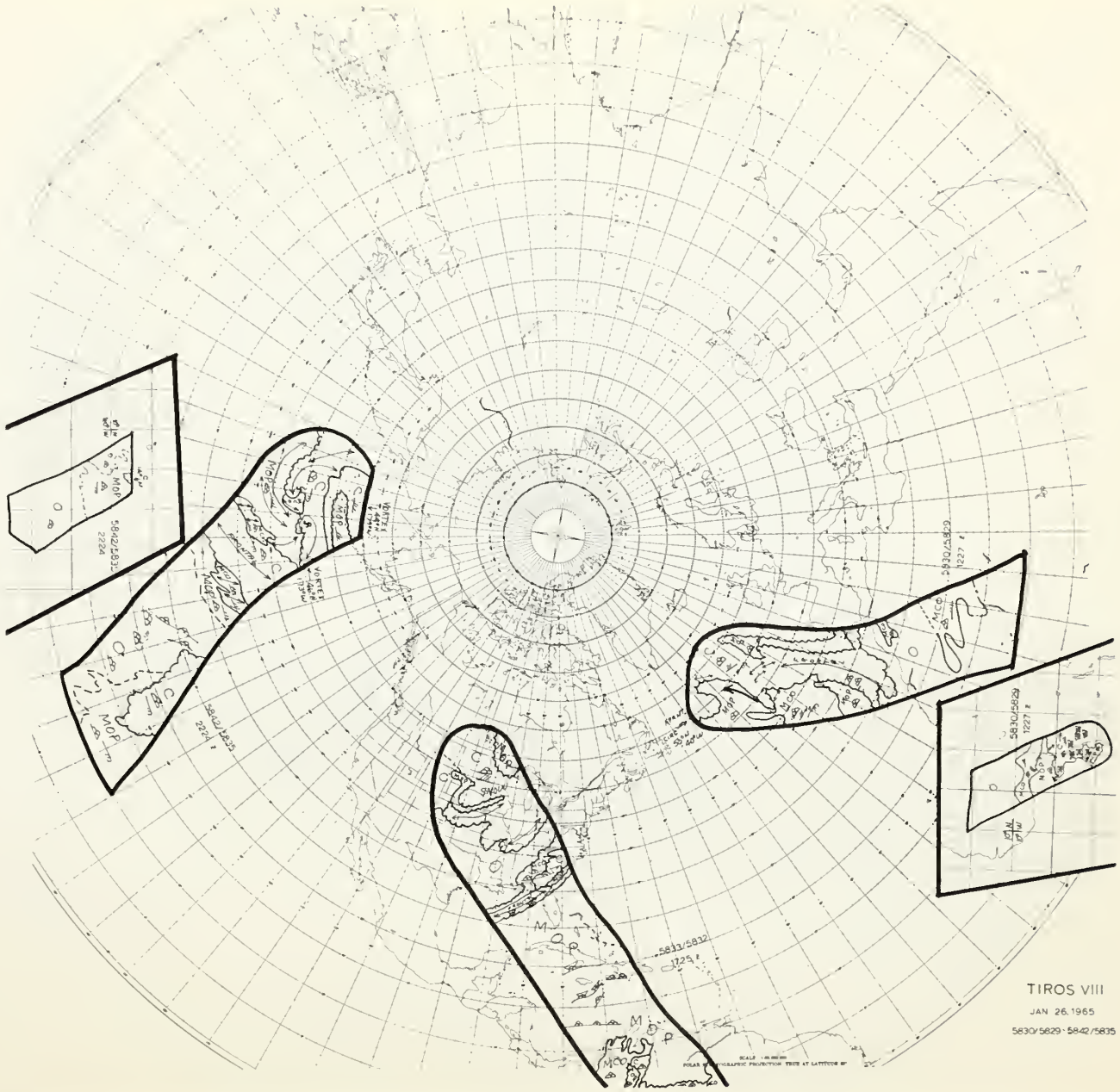
JAN 24 - 28, 1965

5804/DIR - 5828 5822



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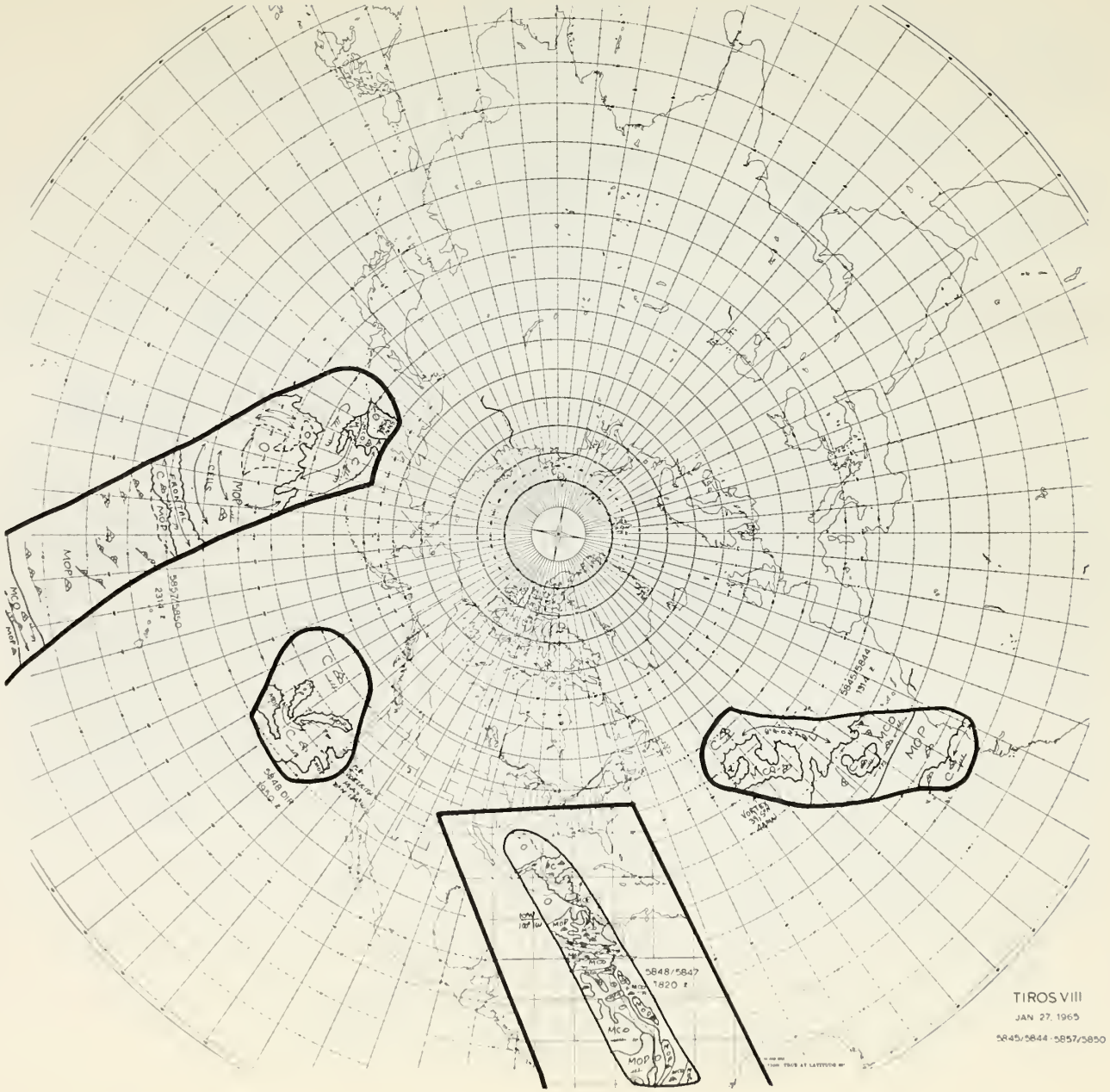
JAN 26, 1965

5830/5829 · 5842/5835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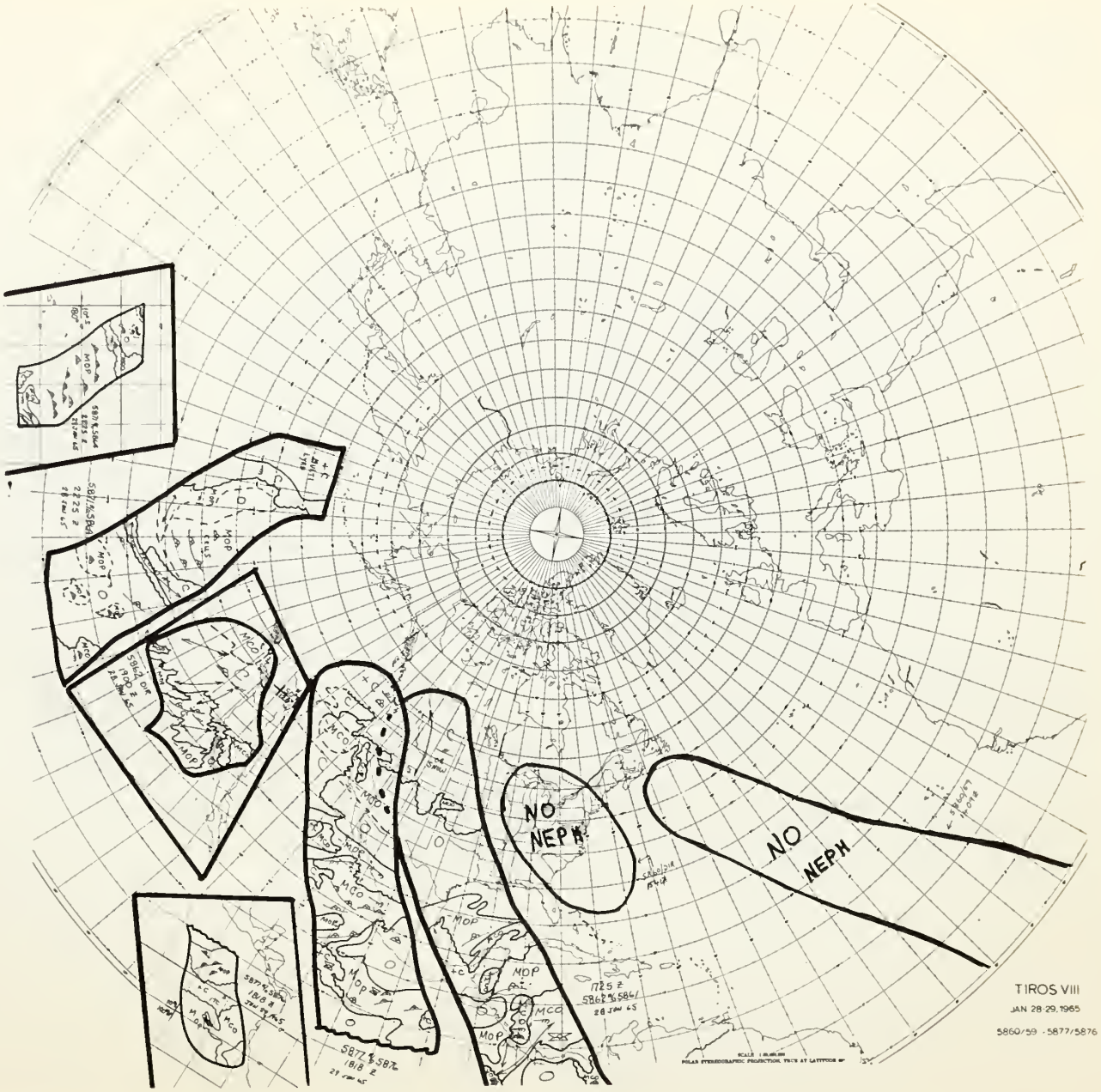
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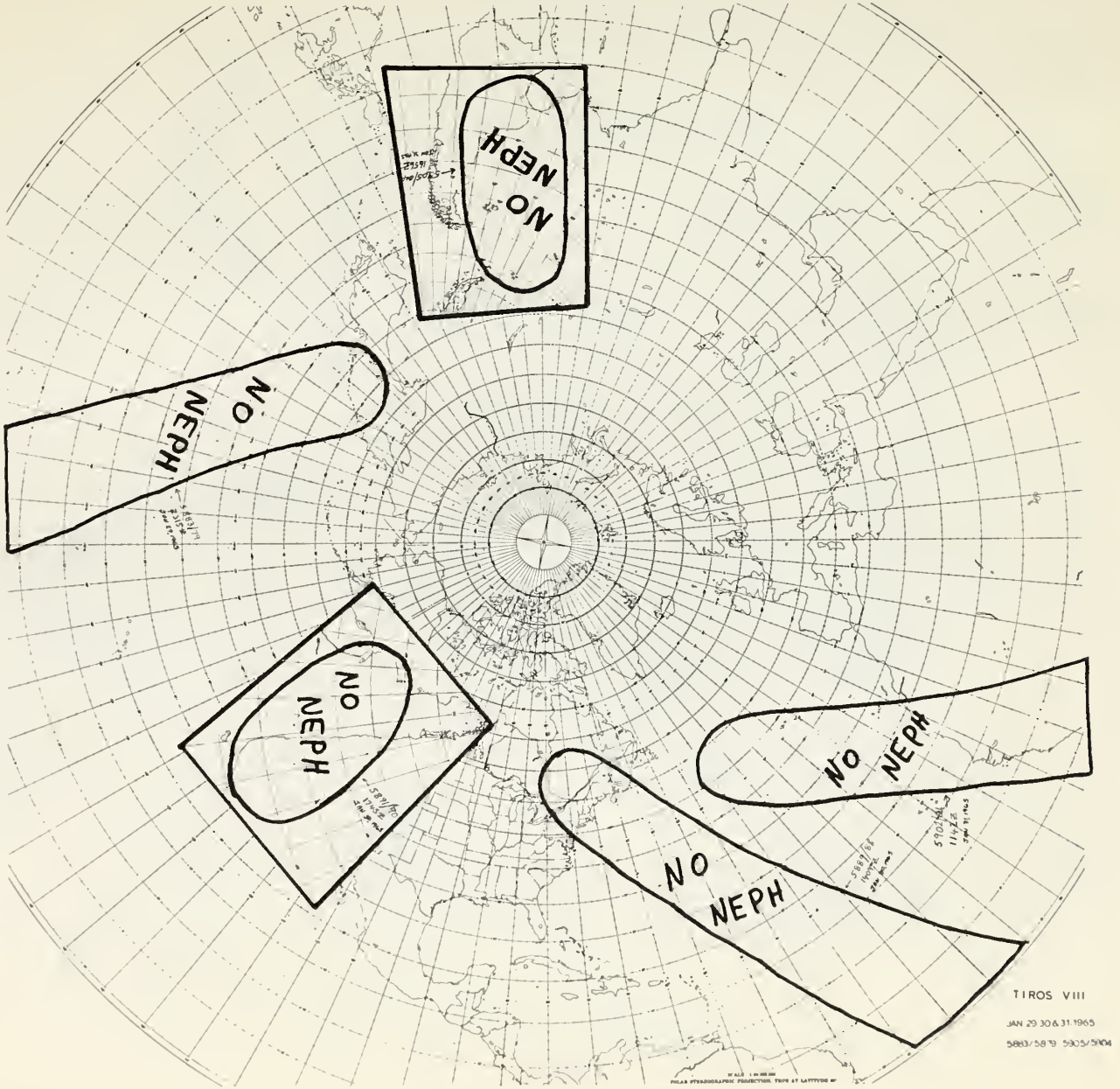
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5942/41
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5912/67
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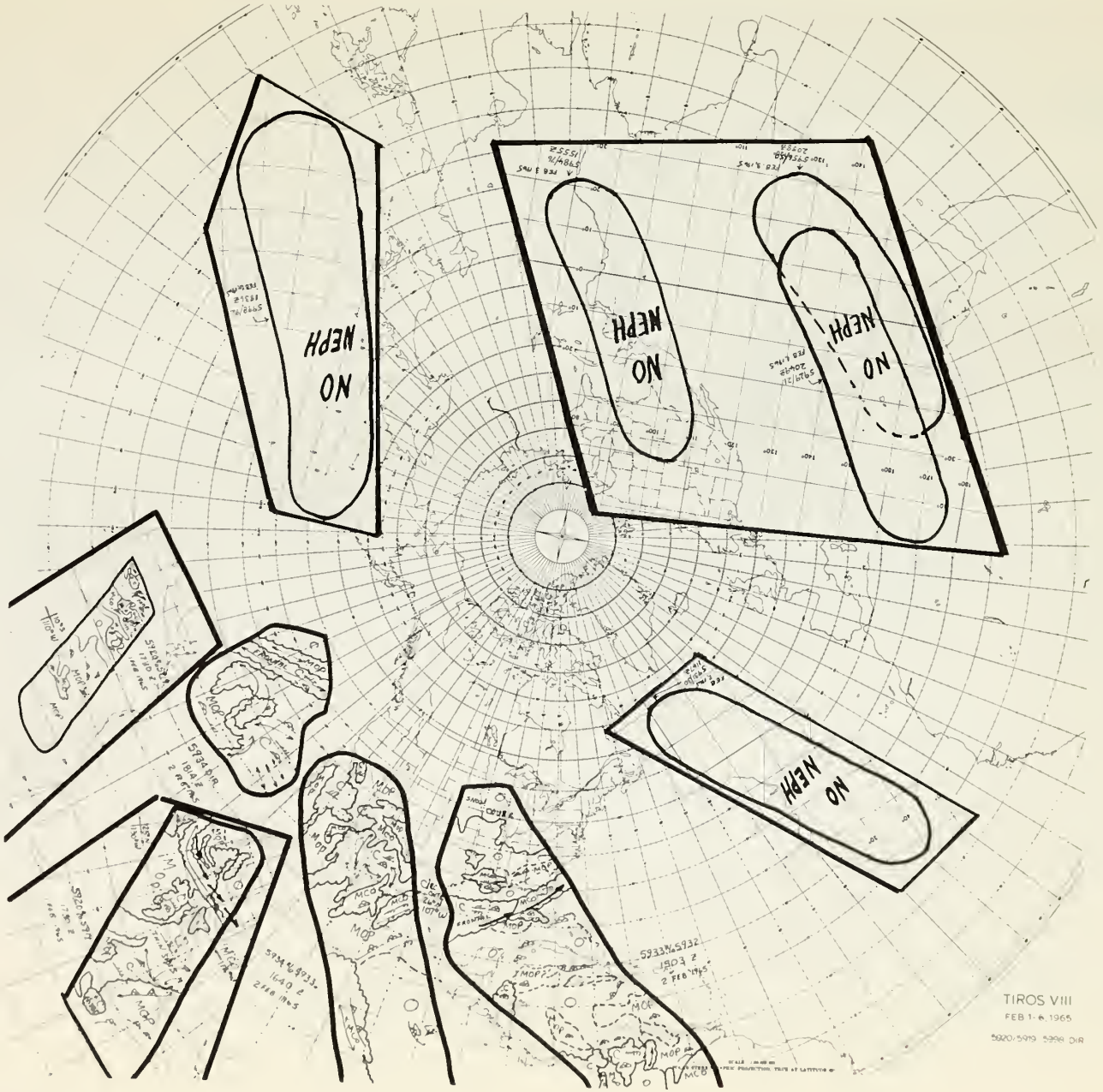
5943/42
0729Z
2-3-65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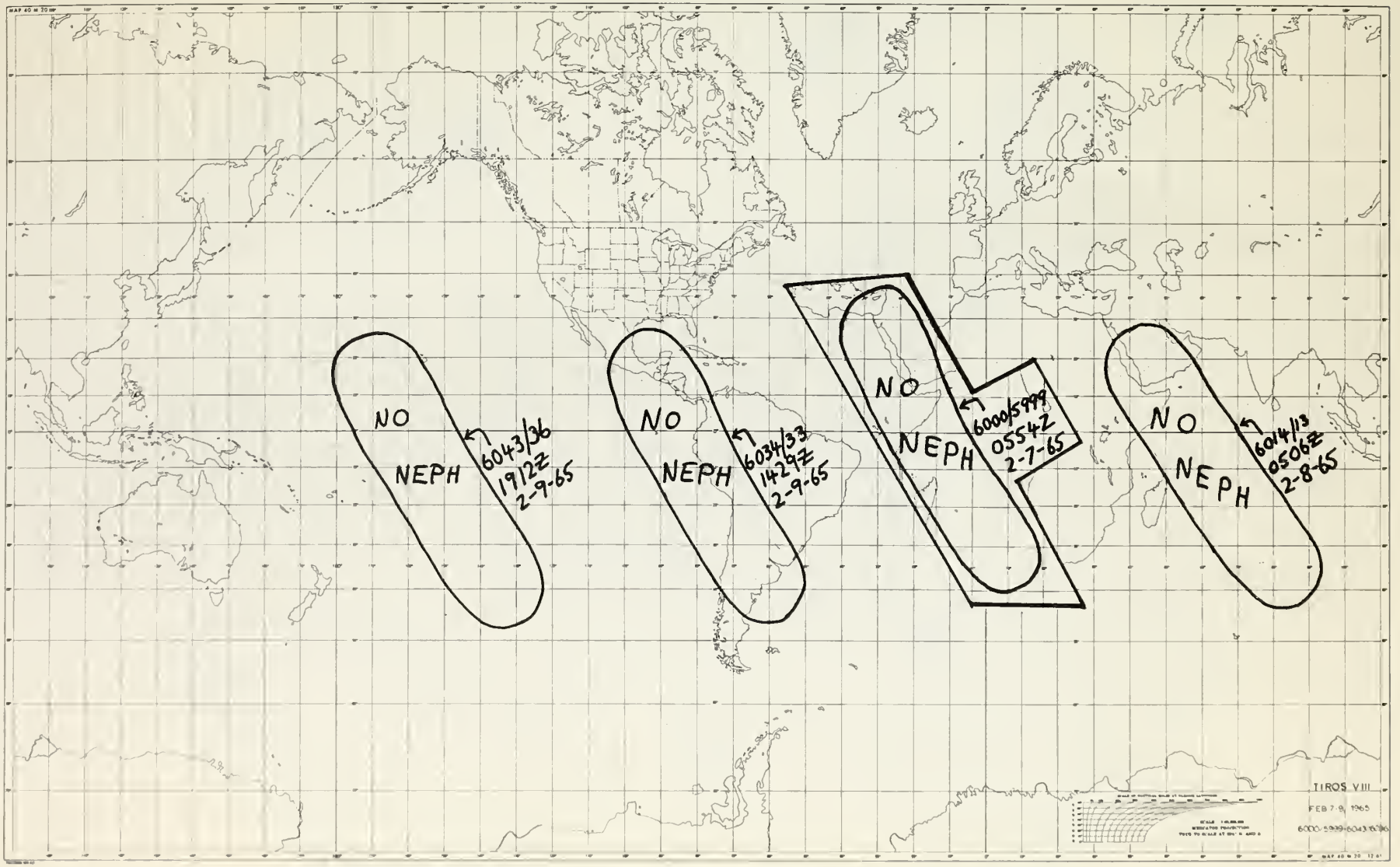
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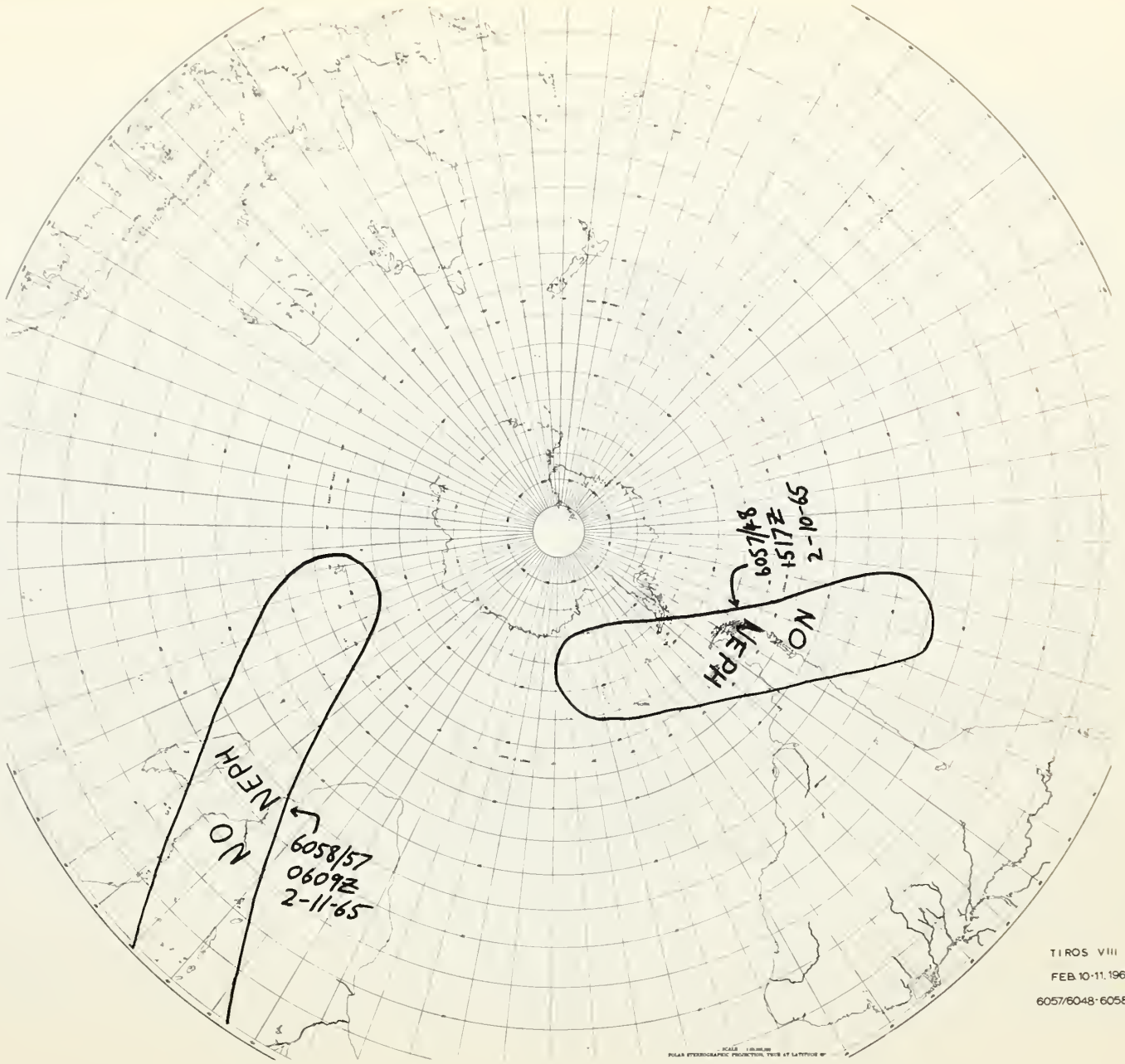
FEB 7-9, 1965



TIROS VIII

FEB. 10-11, 1965

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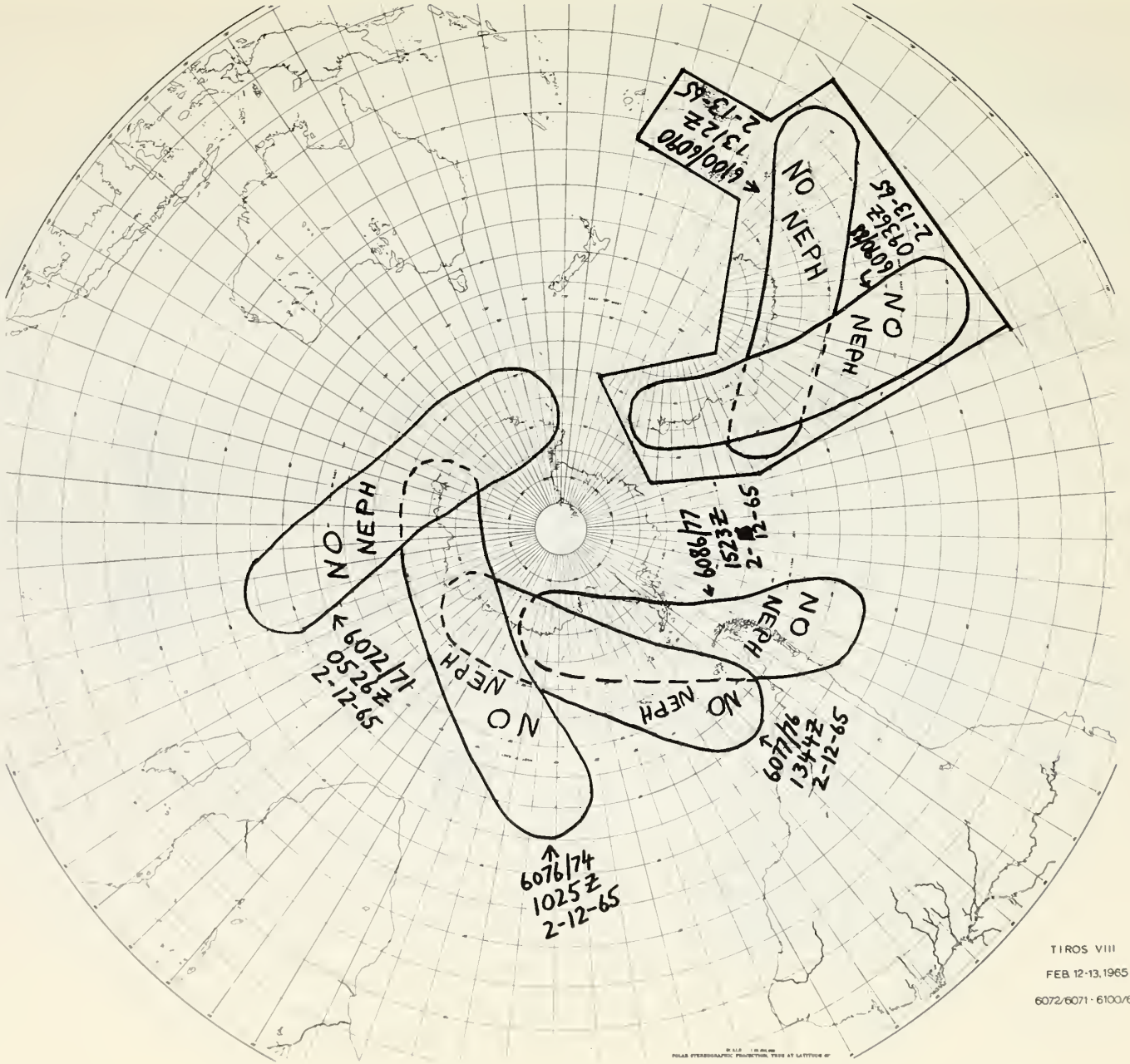
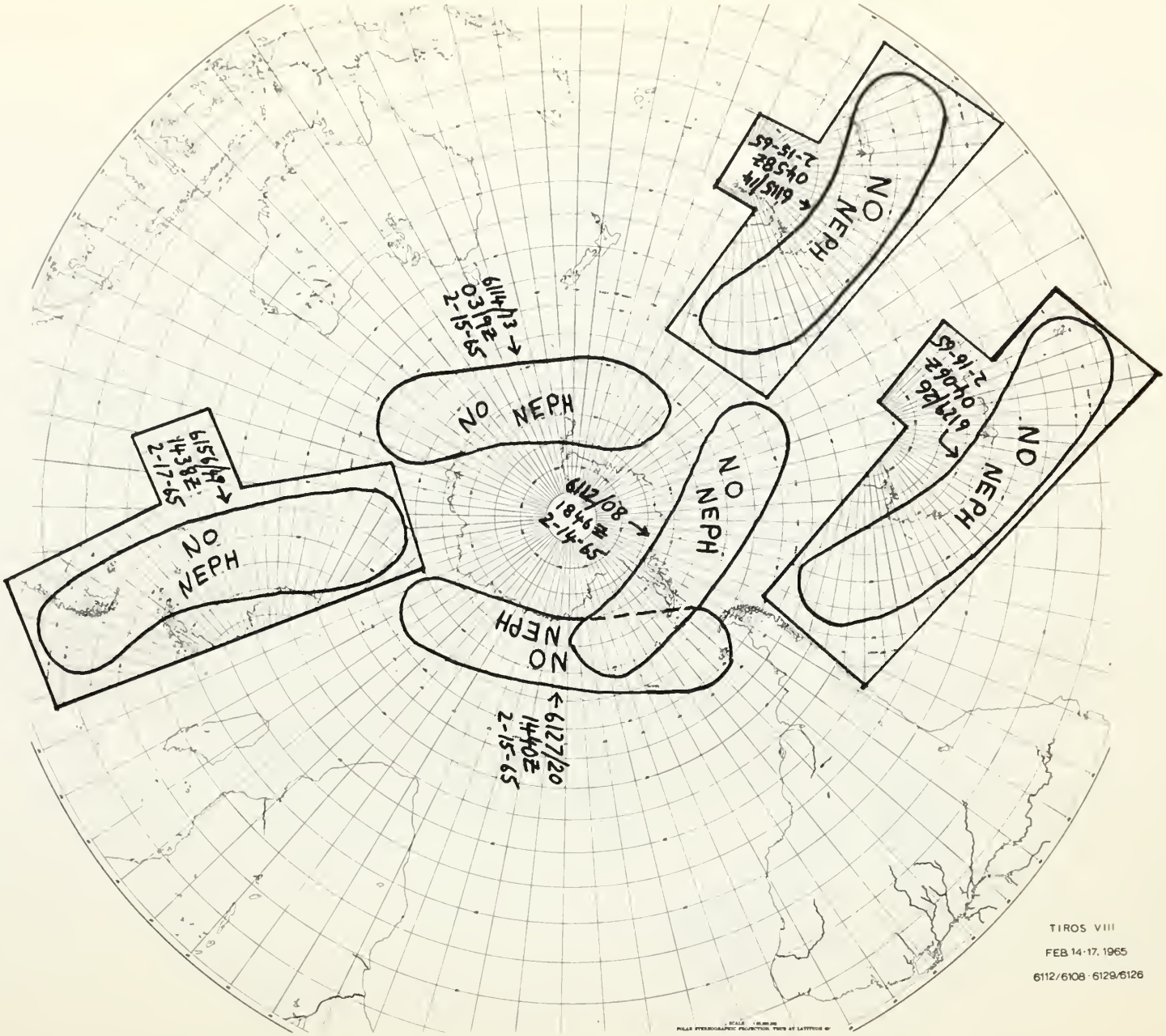


TIROS VIII

FEB 12-13, 1965

6072/6071 · 6100/6090



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FEB. 14-17, 1965

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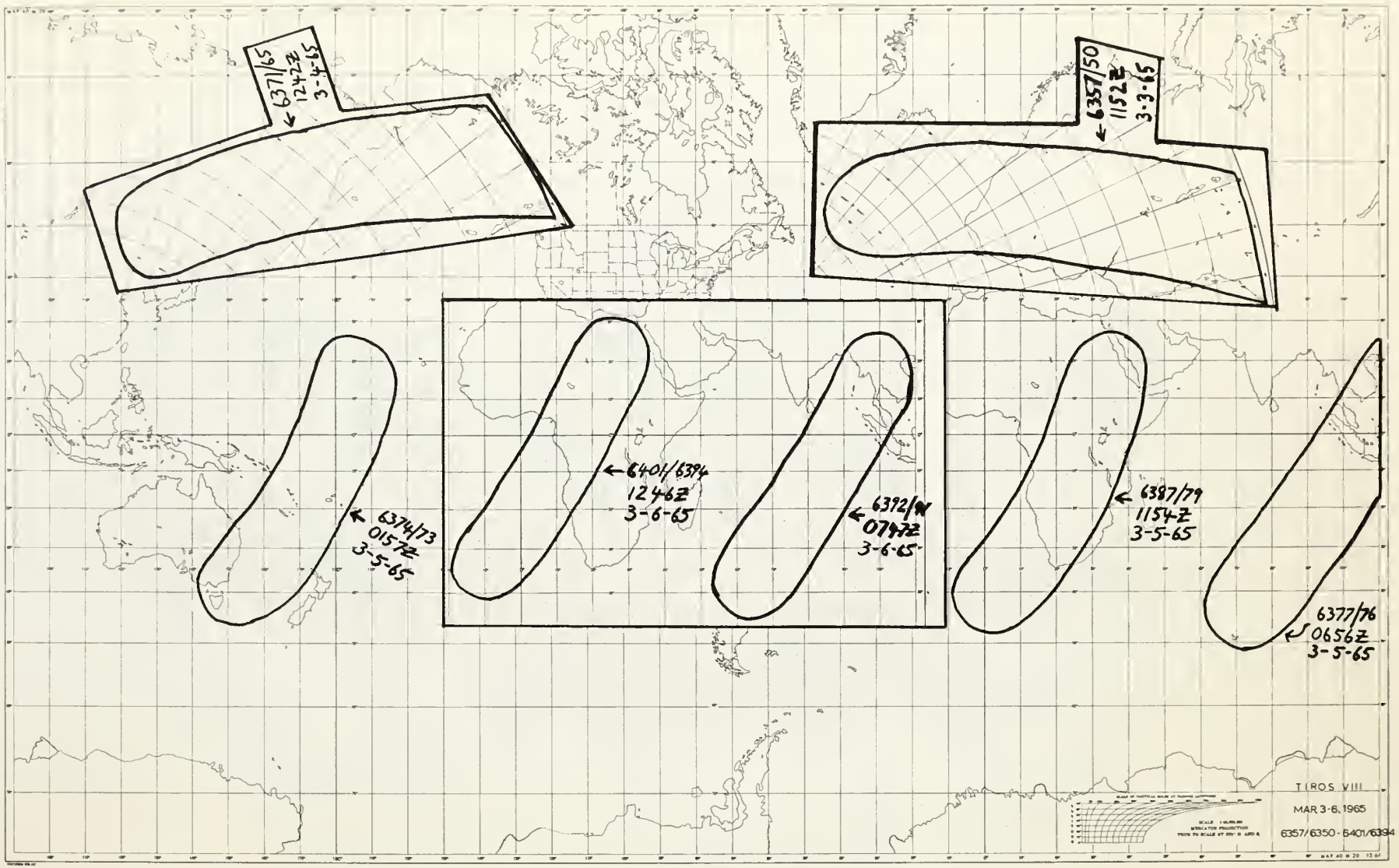
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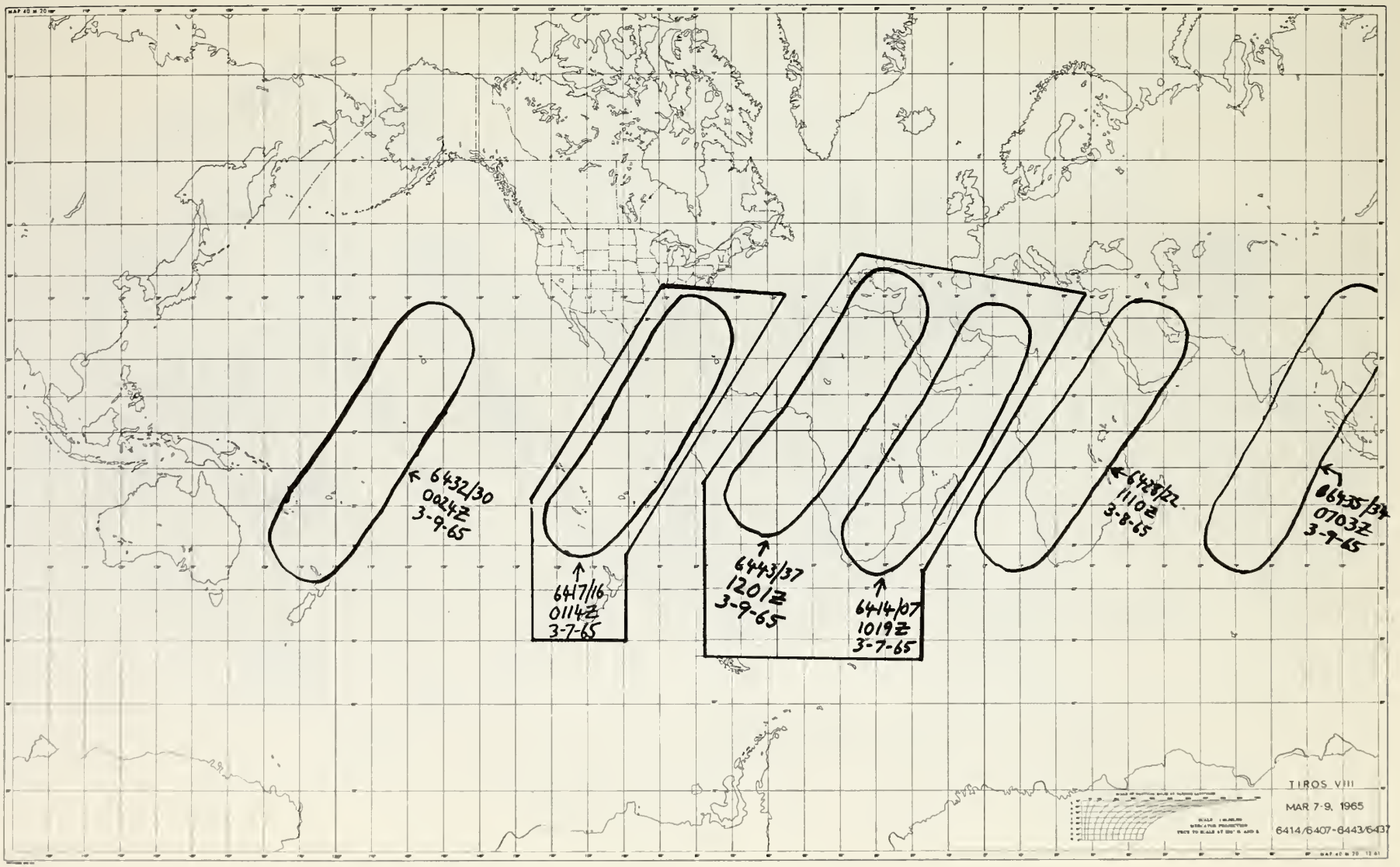
MAR 3-6, 1965
6357/6350-6401/6394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6428/22
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MAR 7-9, 1965
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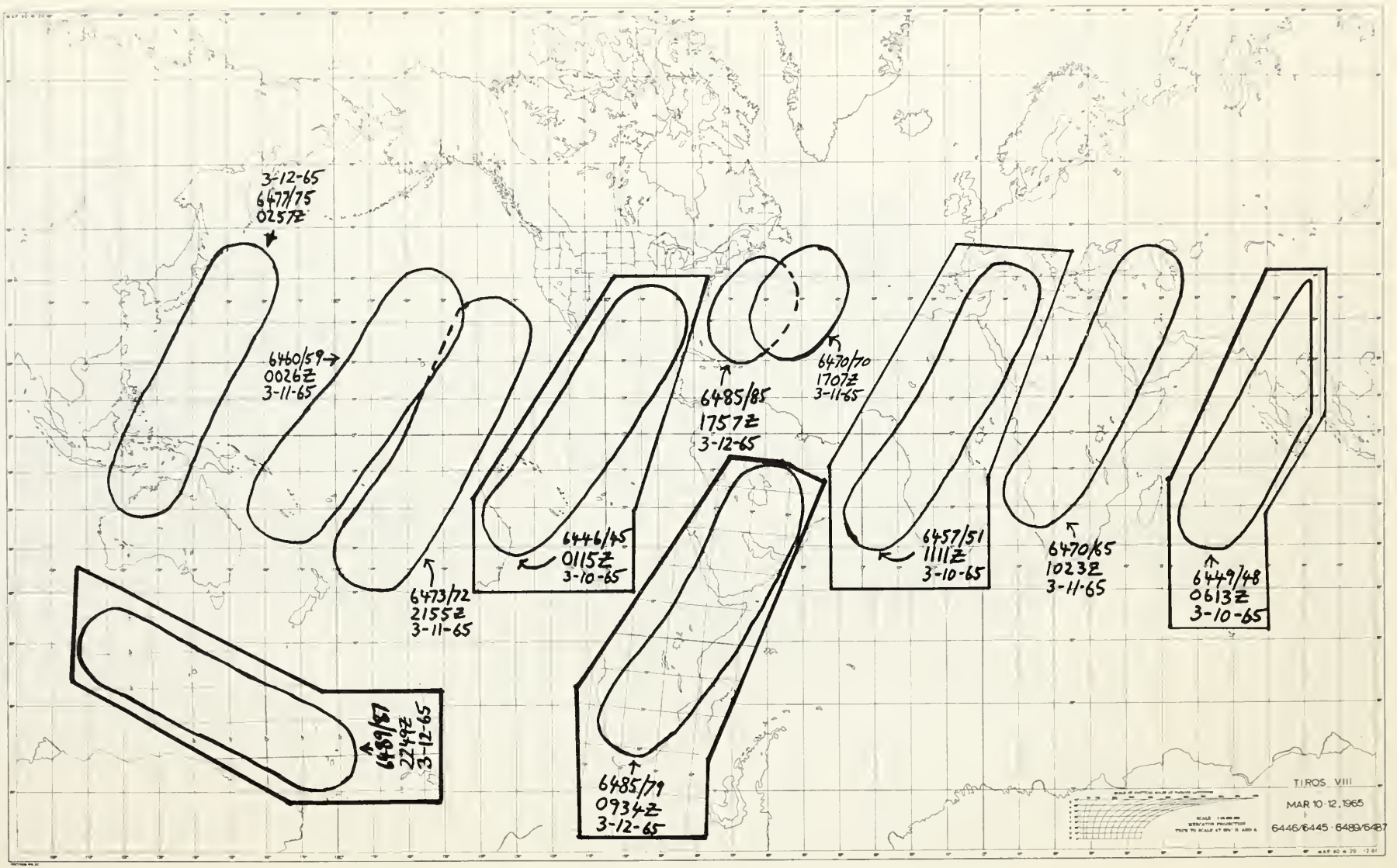
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6446/45
0115Z
3-10-65
6485/85
1757Z
3-12-65
6470/70
1707Z
3-11-65
6457/51
1111Z
3-10-65
6470/65
1023Z
3-11-65
6449/48
0613Z
3-10-65
6459/57
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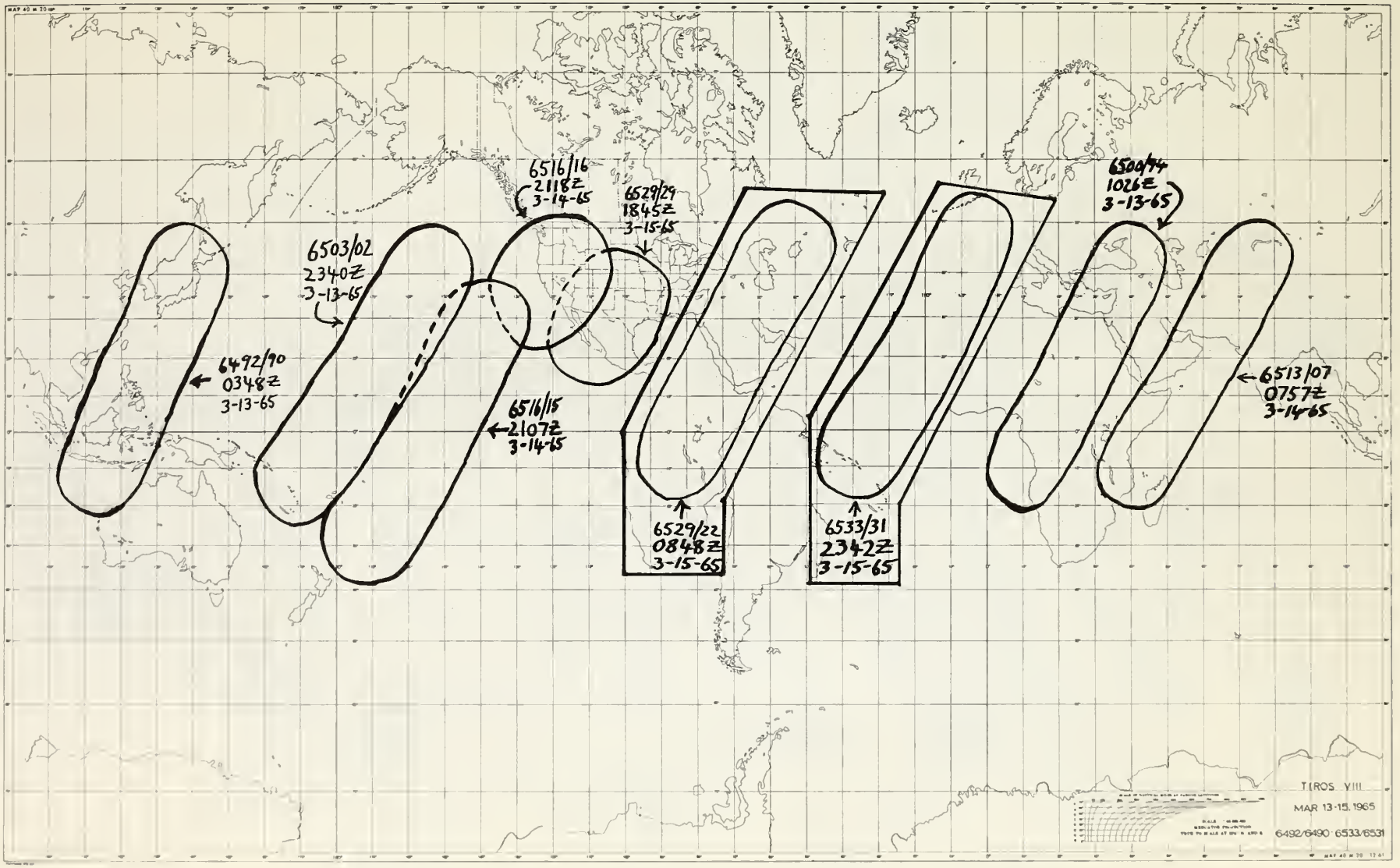
6485/79
0934Z
3-12-65
TIROS VIII
MAR 10-12, 1965
6446/6445 · 6489/6487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6529/29
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6504/74
1026Z
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6492/90
0348Z
3-13-65
6516/15
2107Z
3-14-65
6513/07
0757Z
3-14-65
6529/22
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6533/31
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3-15-65
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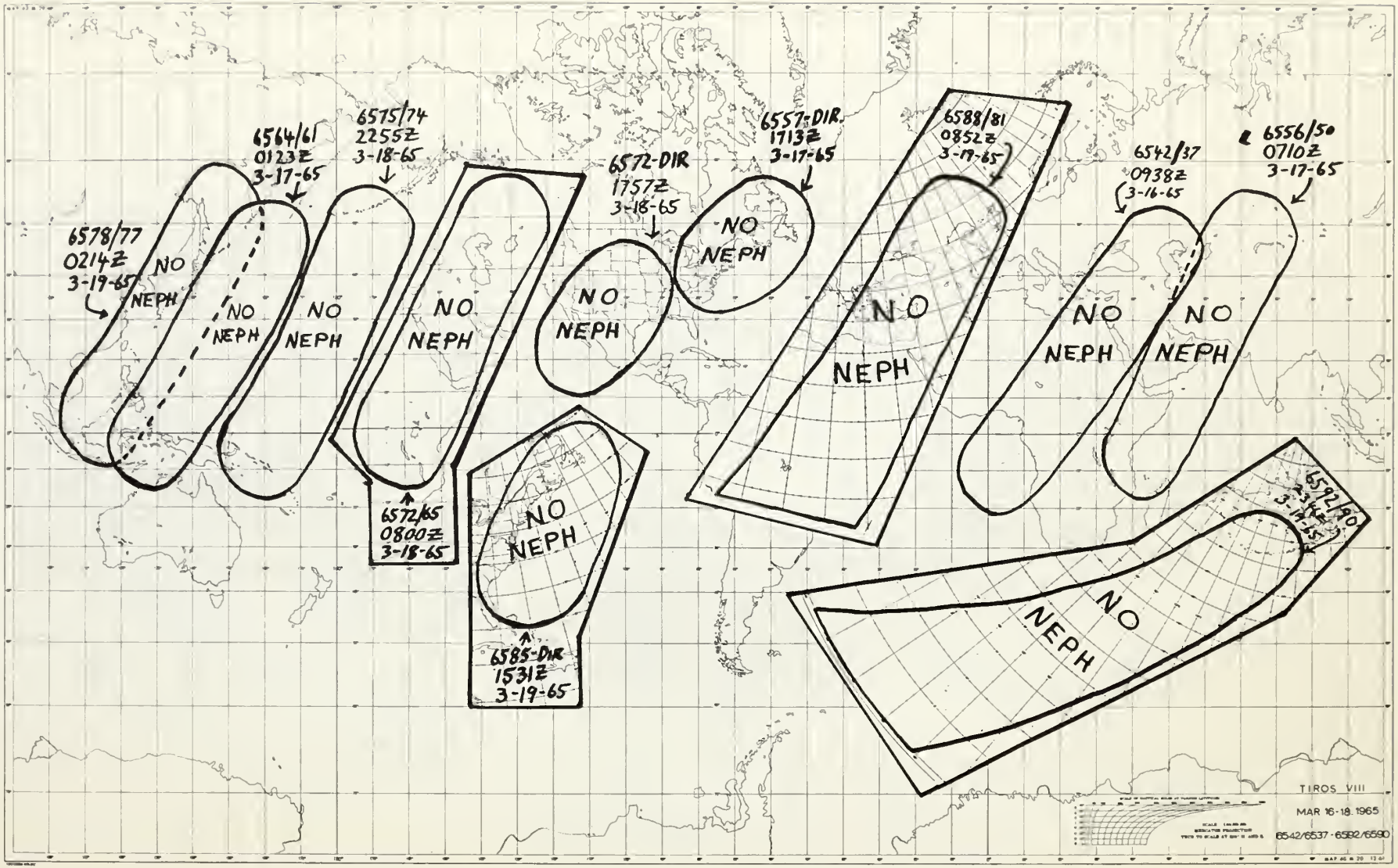
MAR 13-15, 1965
6492/6490 · 6533/6531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NEPH
6557-DIR
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3-17-65
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NEPH
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3-17-65
NO
NEPH
6542/37
0938Z
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NEPH
6556/50
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3-17-65
6592/90
3-17-65
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MAR 16-18, 1965
6542/6537 - 6592/6590

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6602-DIR 1943Z 3-20-65
6607/05 0056Z 3-21-65
6450/45 2027Z 3-23-65
6602/65 0623Z 3-20-65
66.16/10 0852Z 3-21-65
6432/24 0803Z 3-22-65
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MAR 20-23, 1965
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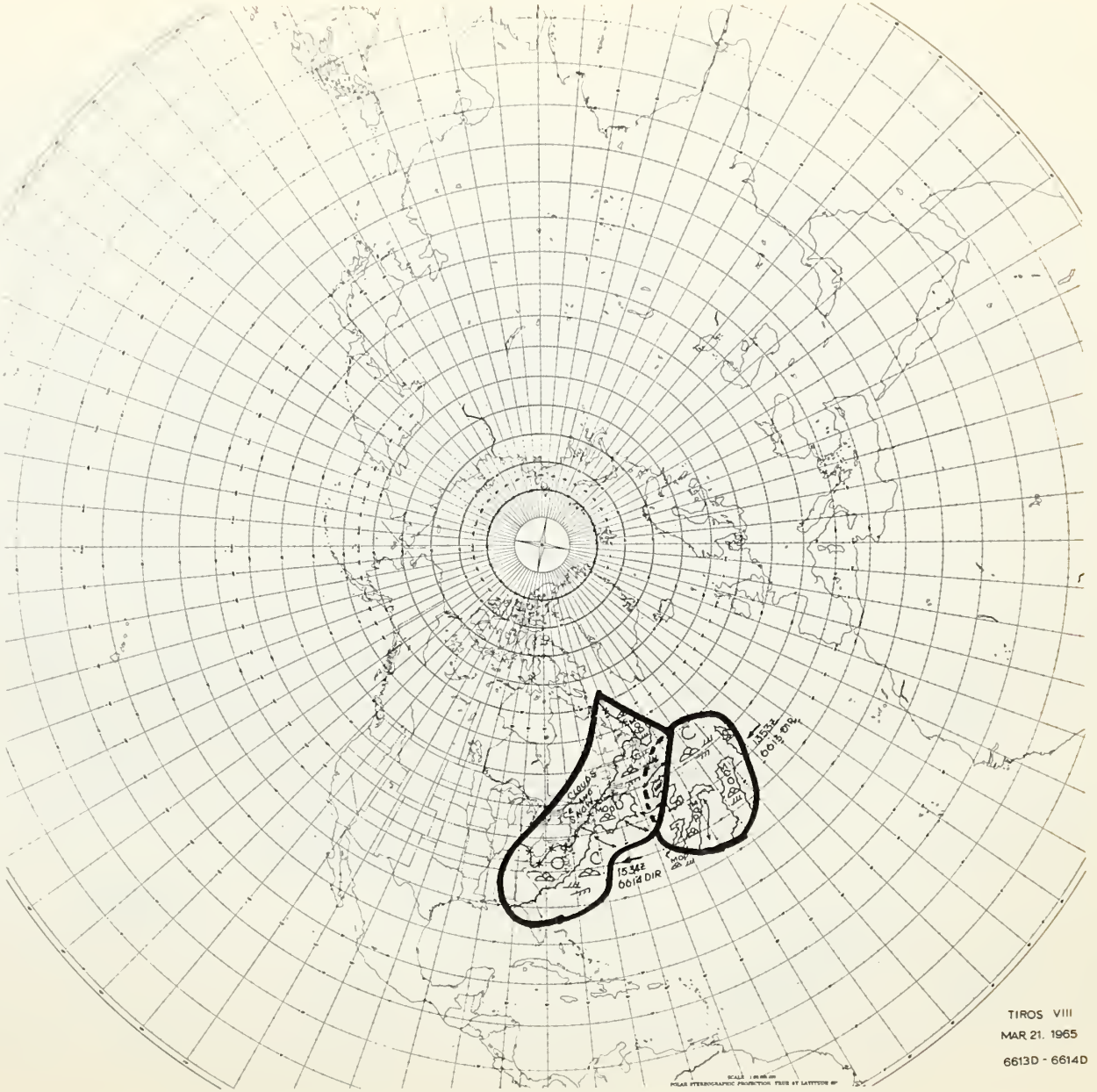

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MAR 23-26, 1965
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NO NEPH
6685/81
0625Z
3-26-65
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6657 DIR
1444Z
6692/91
2258Z
3-24-65
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6676/77
2348Z
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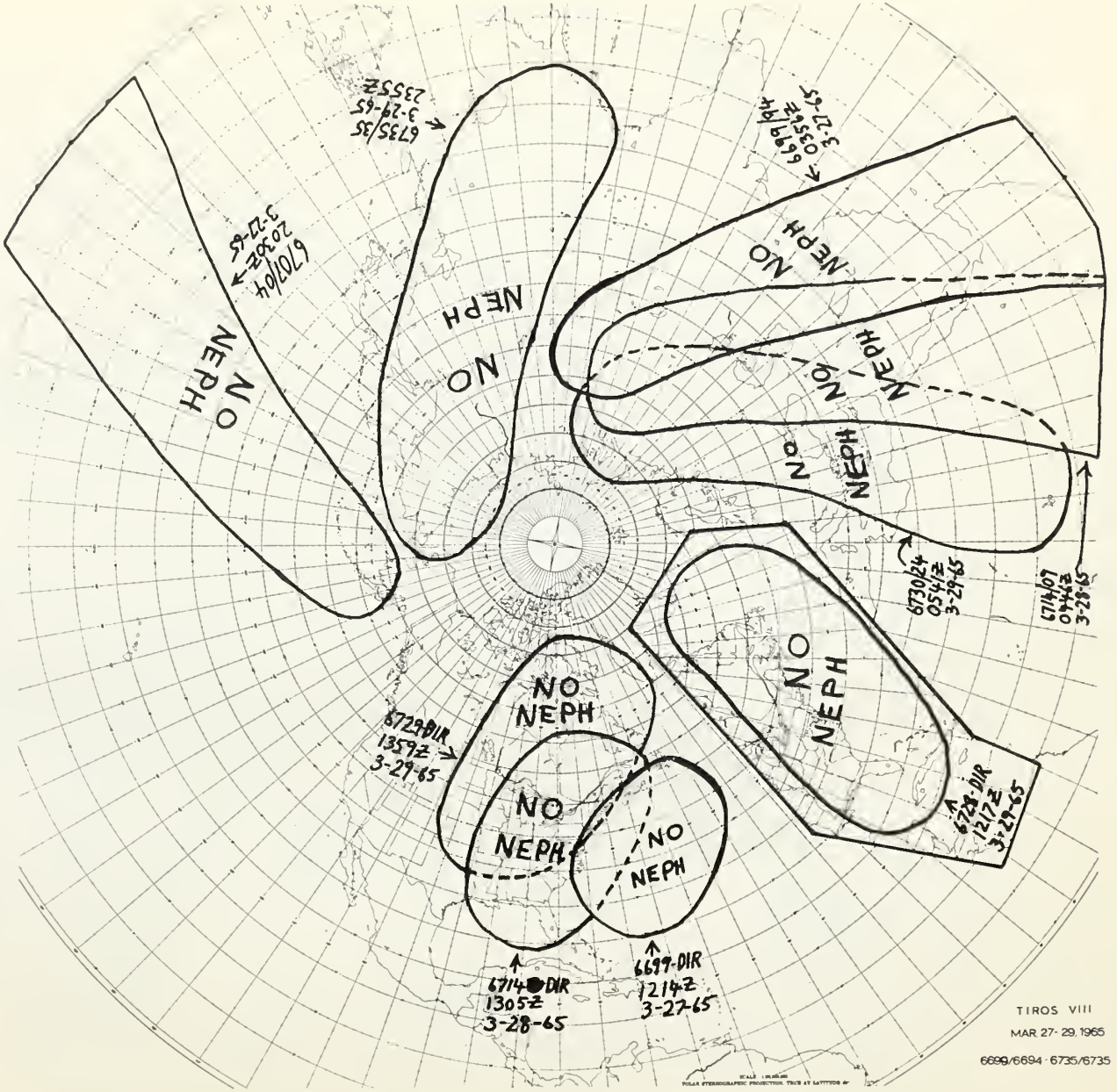
6675/73
1710Z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6730/24
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0541Z
6714/07
3-29-65
0443Z
6729-DIR
1359Z
3-29-65
6714-DIR
1305Z
3-28-65
6699-DIR
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6728-DIR
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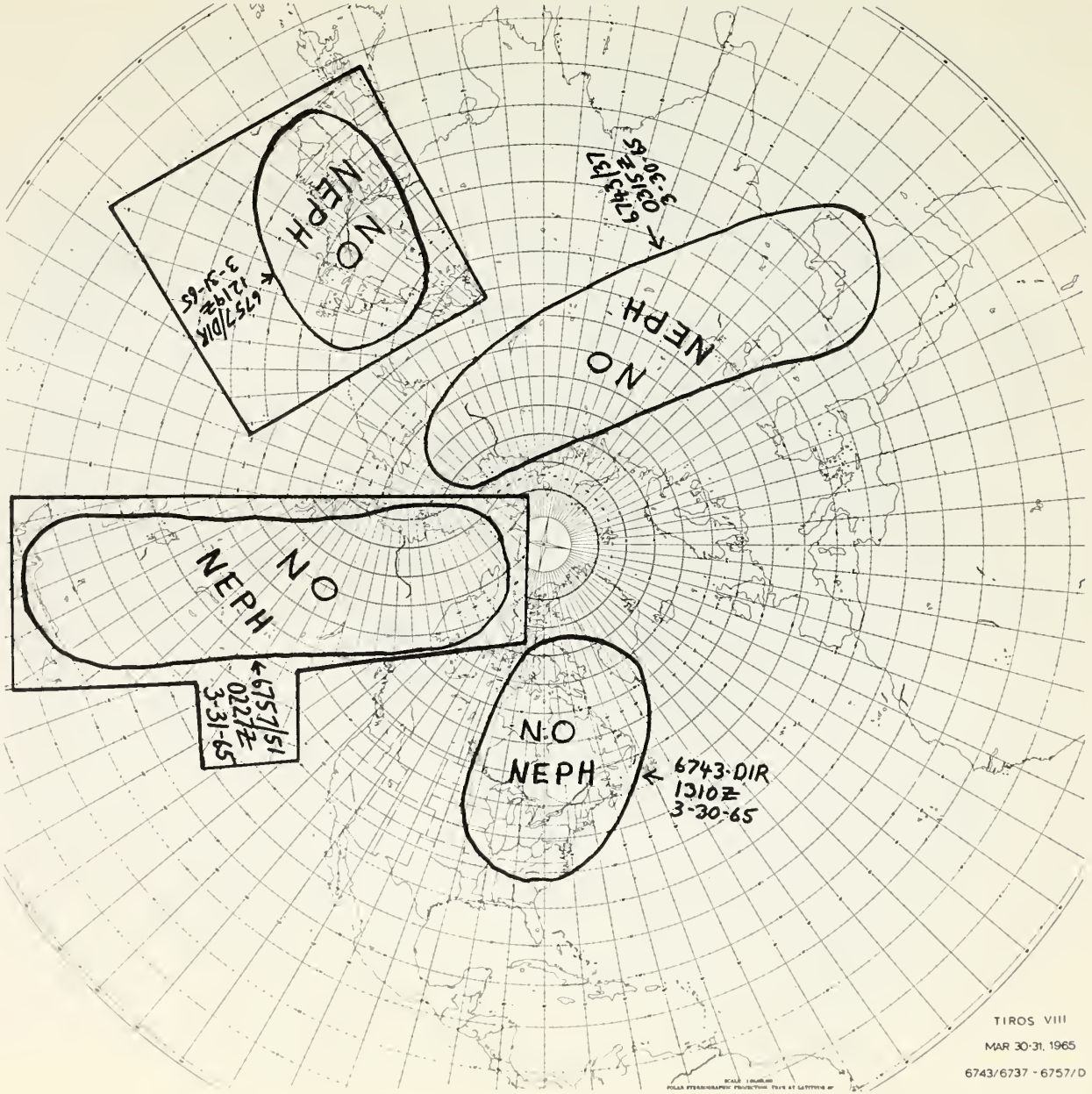
3-29-65
TIROS VIII
MAR 27- 29, 1965
6699/6694 · 6735/6735



TIROS VIII

MAR 30-31, 1965

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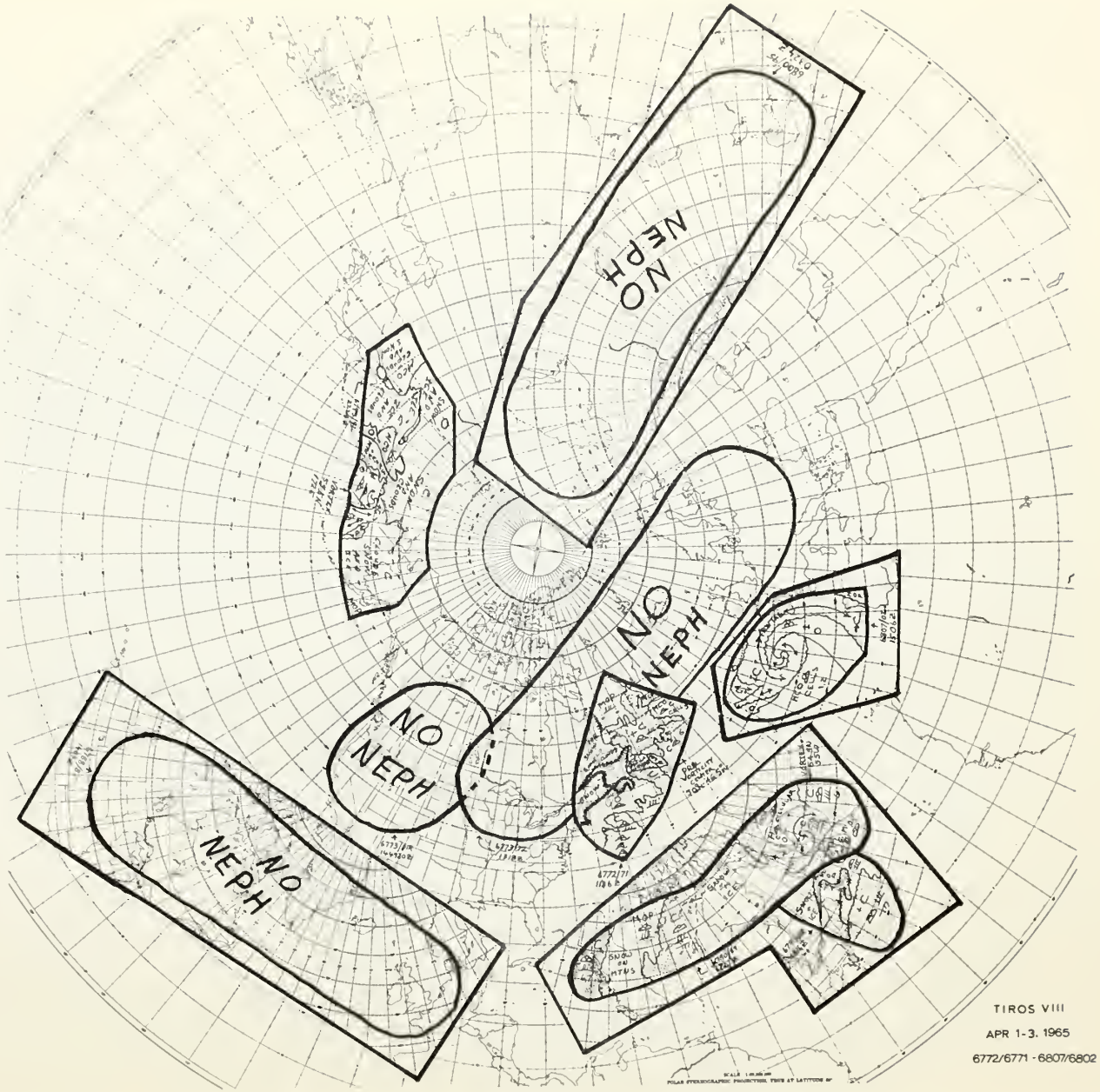

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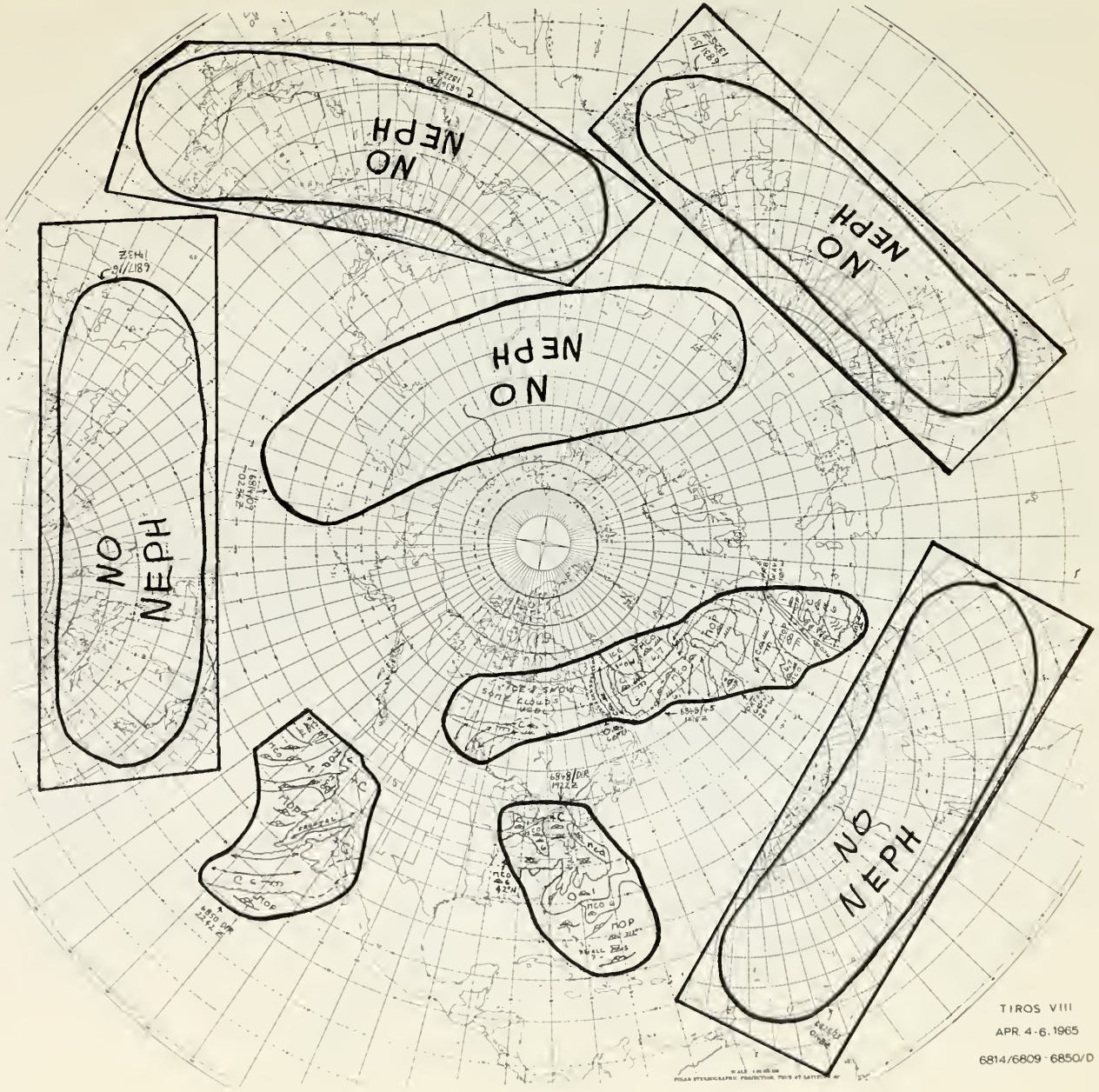
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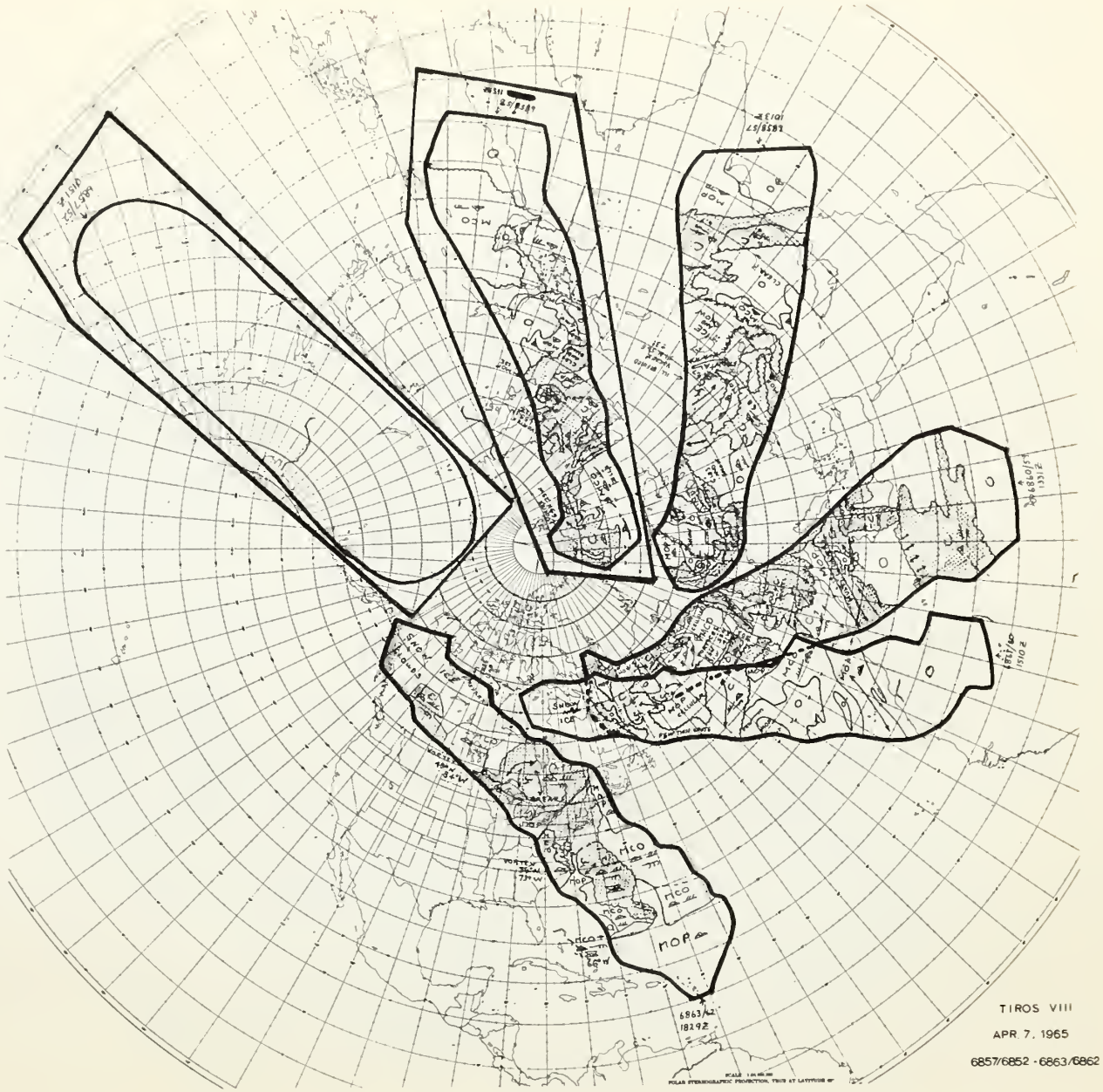

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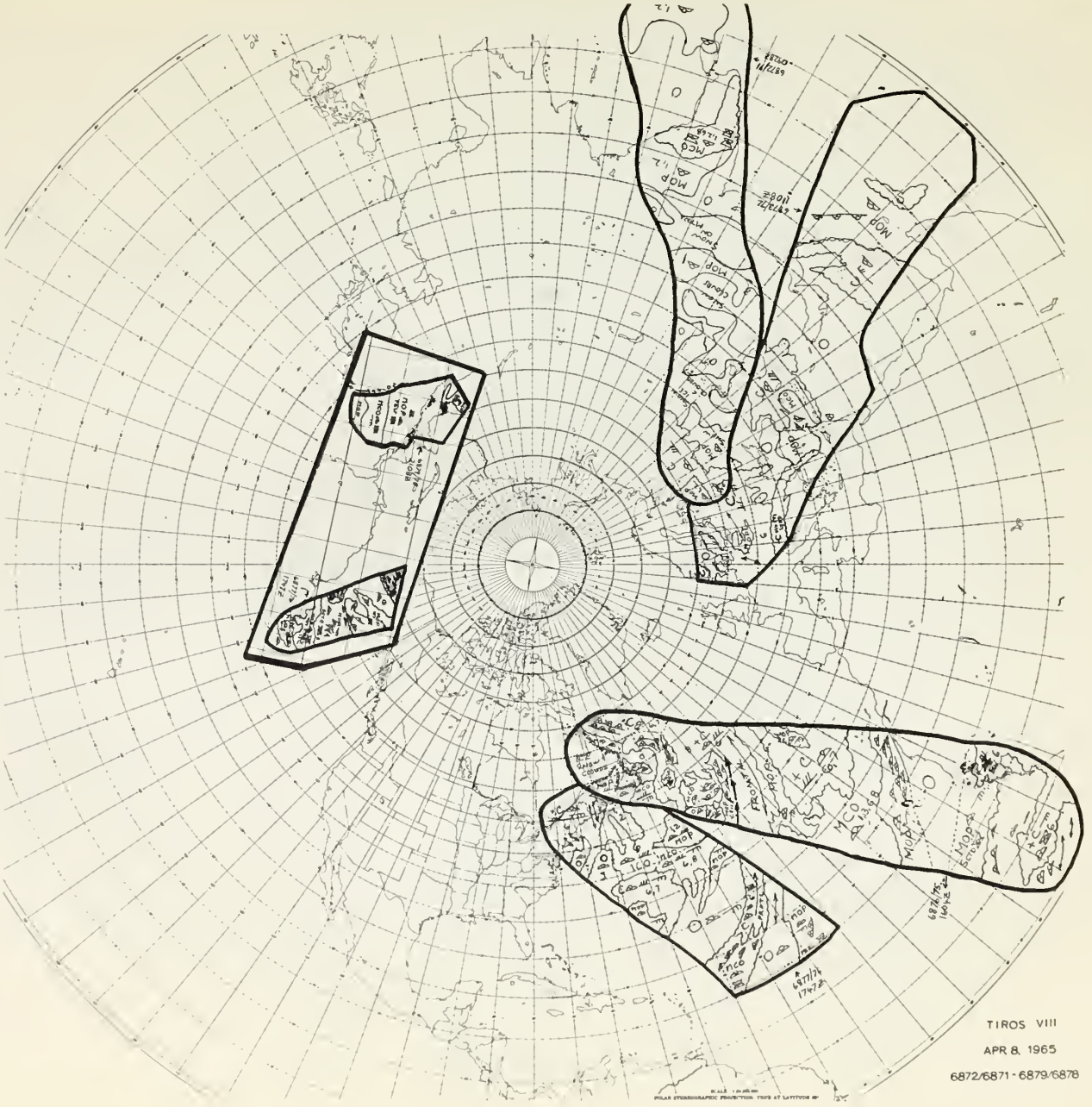

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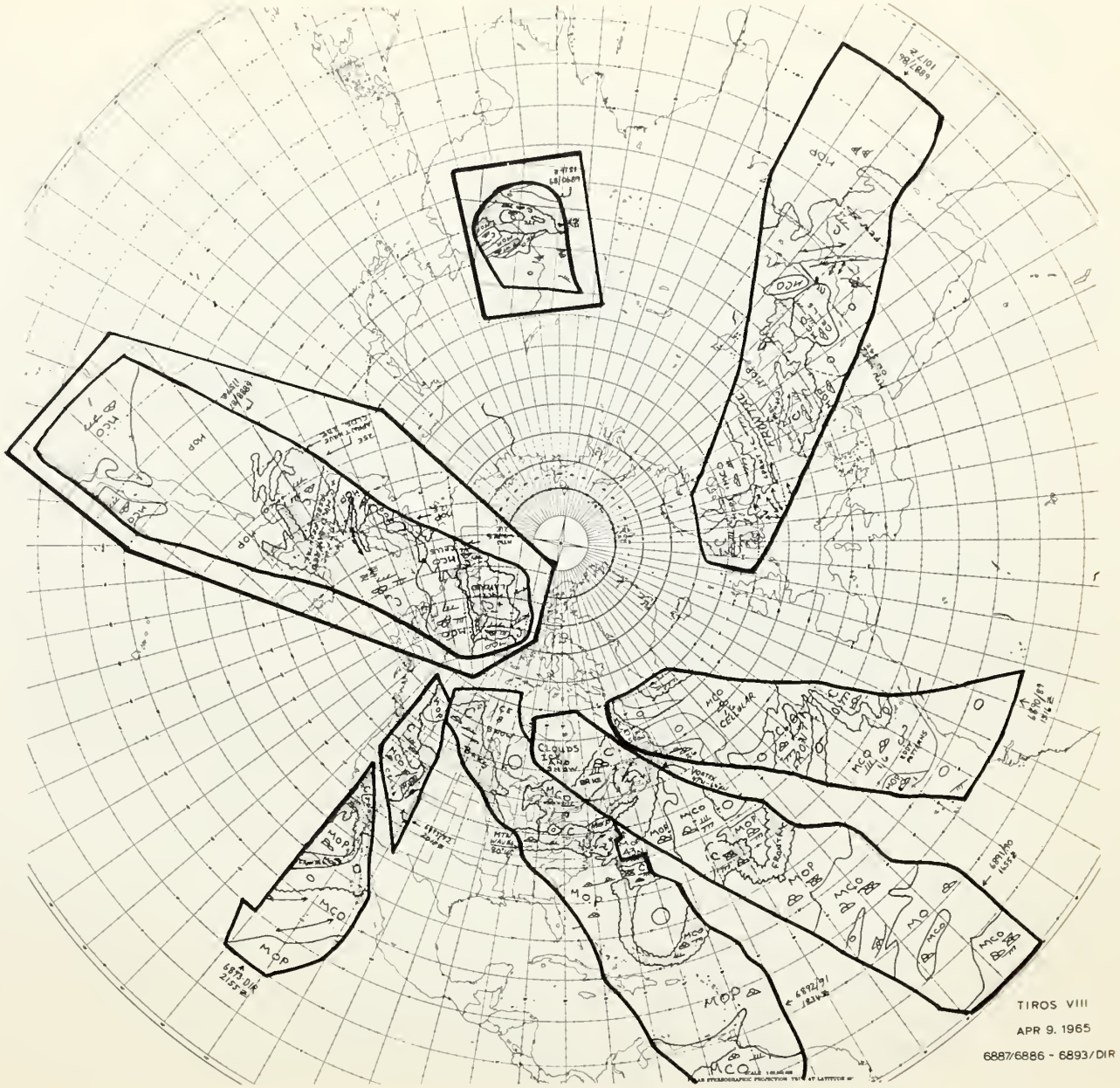
6872/6871 - 6879/6878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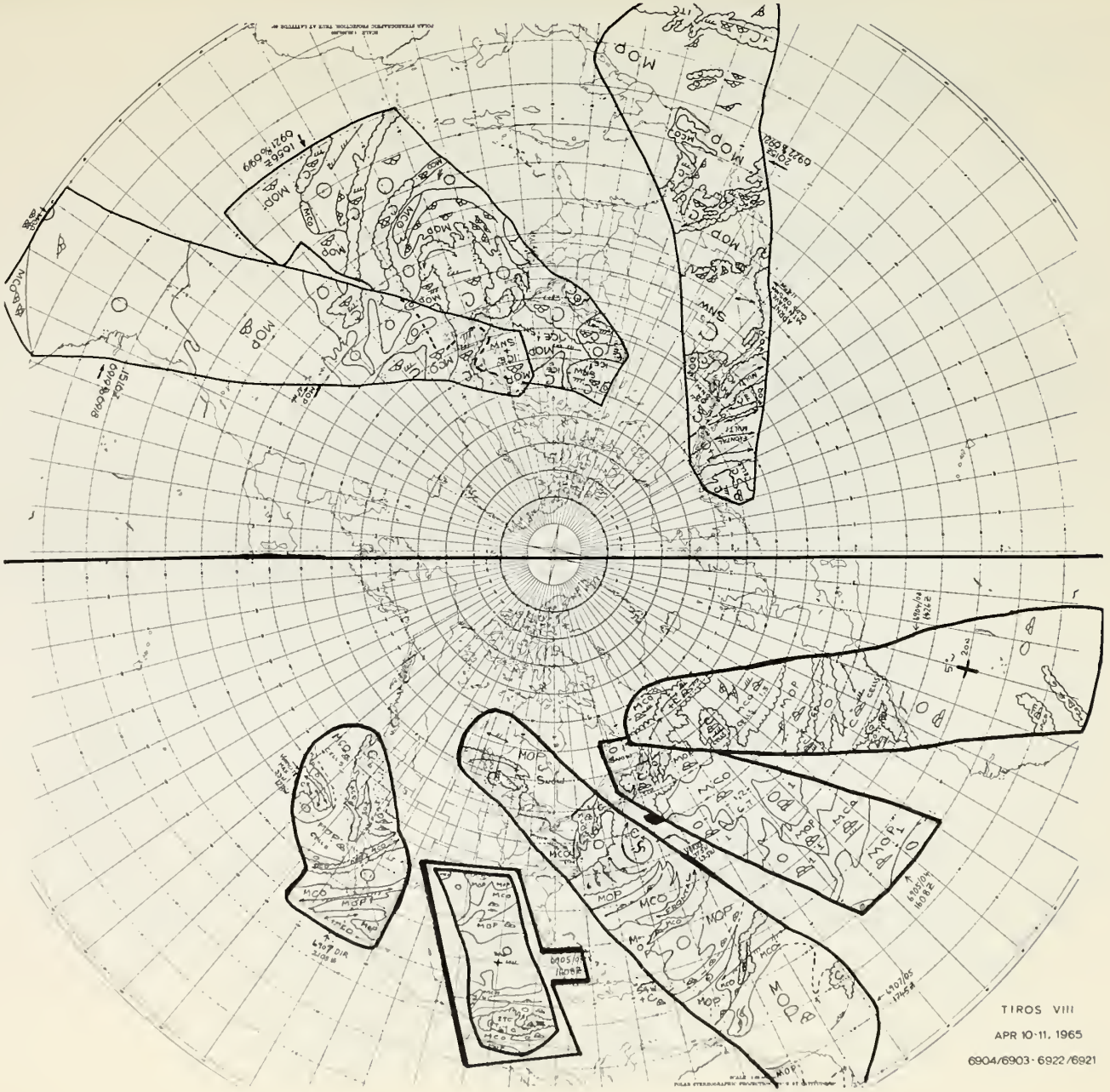
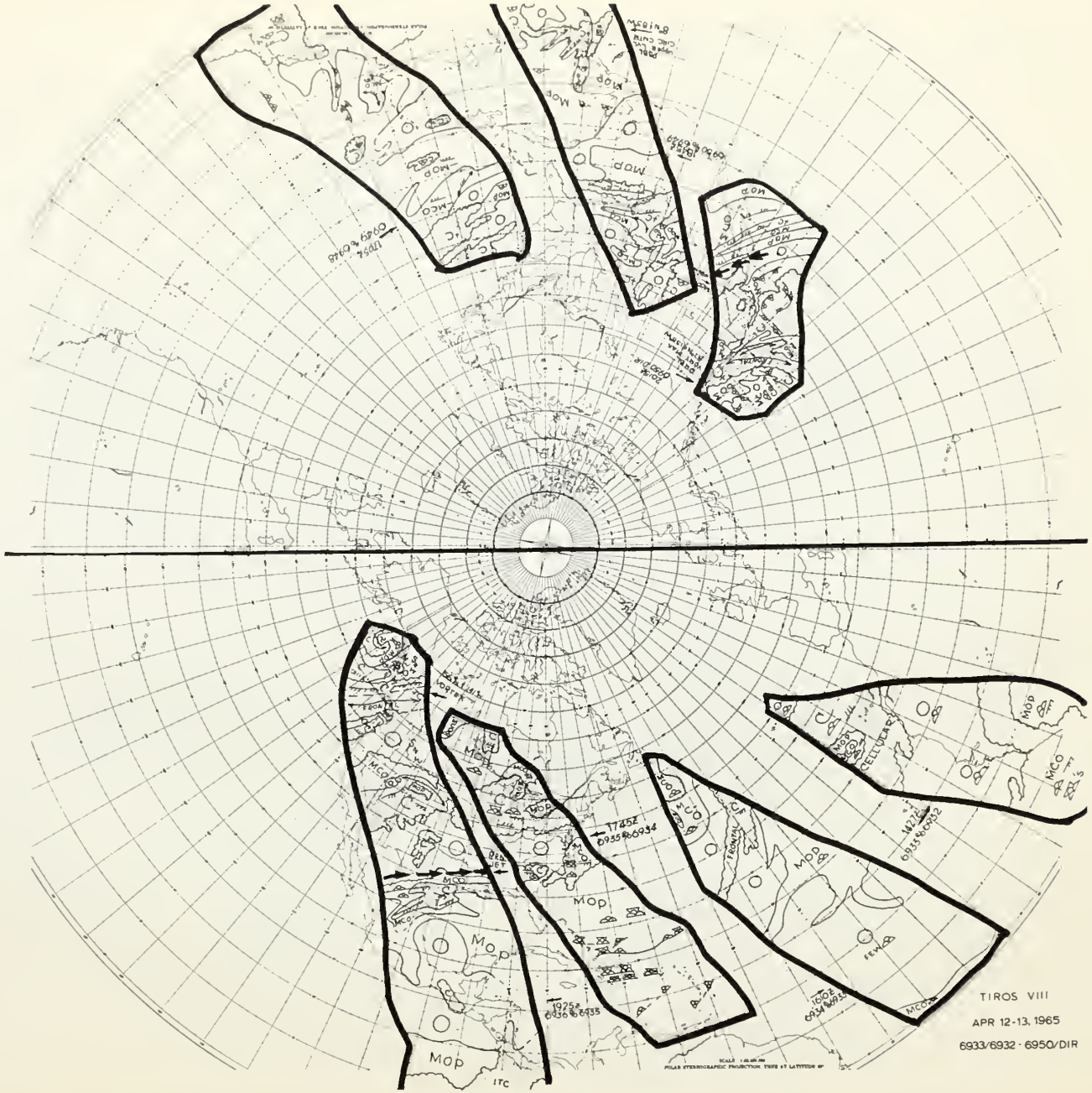
APR 9. 1965
6887/6886 - 6893/DIR



TIROS VIII

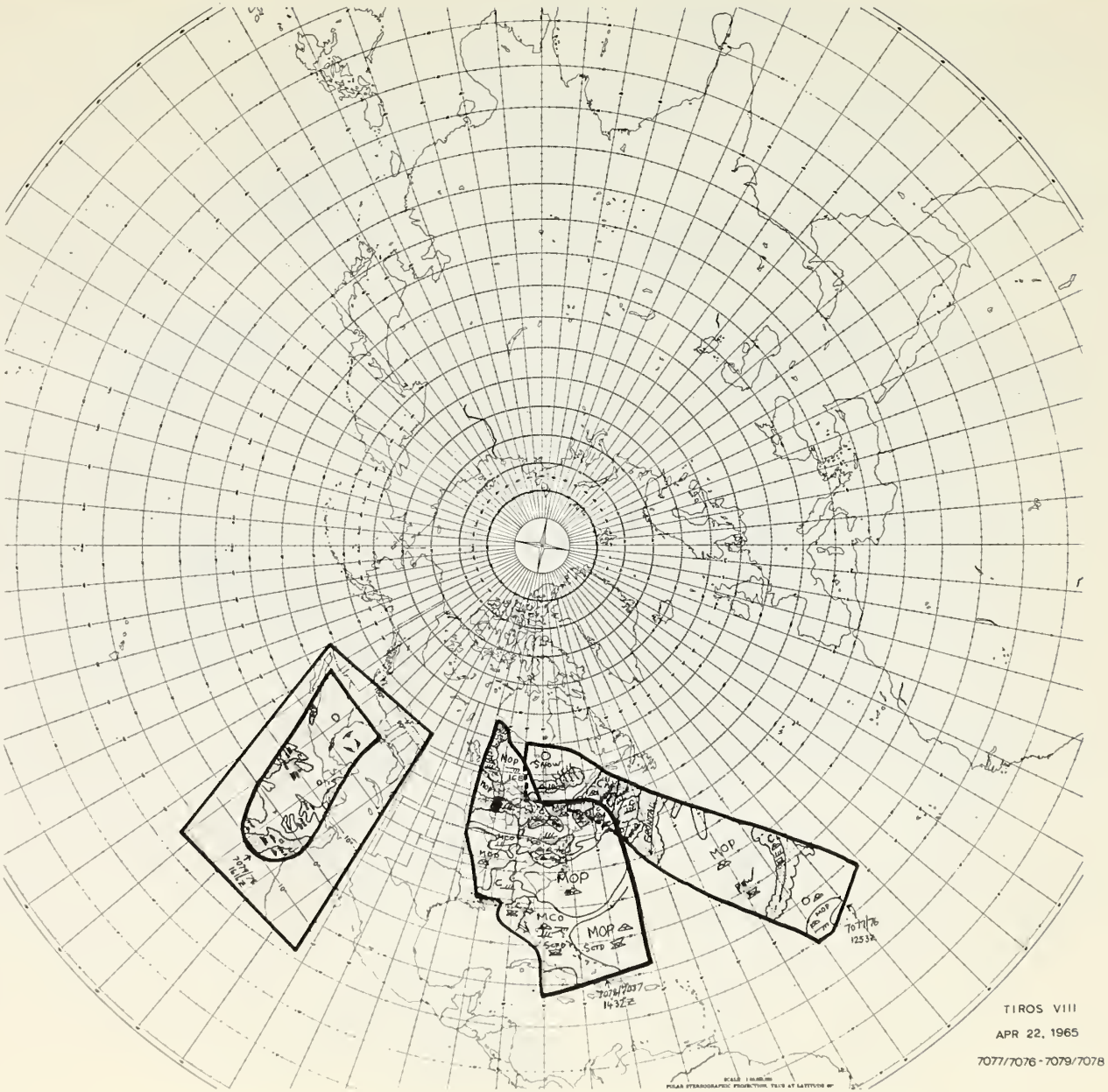
APR 10-11, 1965

6904/6903 · 6922/6921


TIROS VIII
APR 12-13, 1965
6933/6932 · 6950/DIR

TIROS VIII
APR 15-18, 1965
6987/6986 · 7007/7006

TIROS VIII
APR 19-21, 1965
7030/7029-7065/7064



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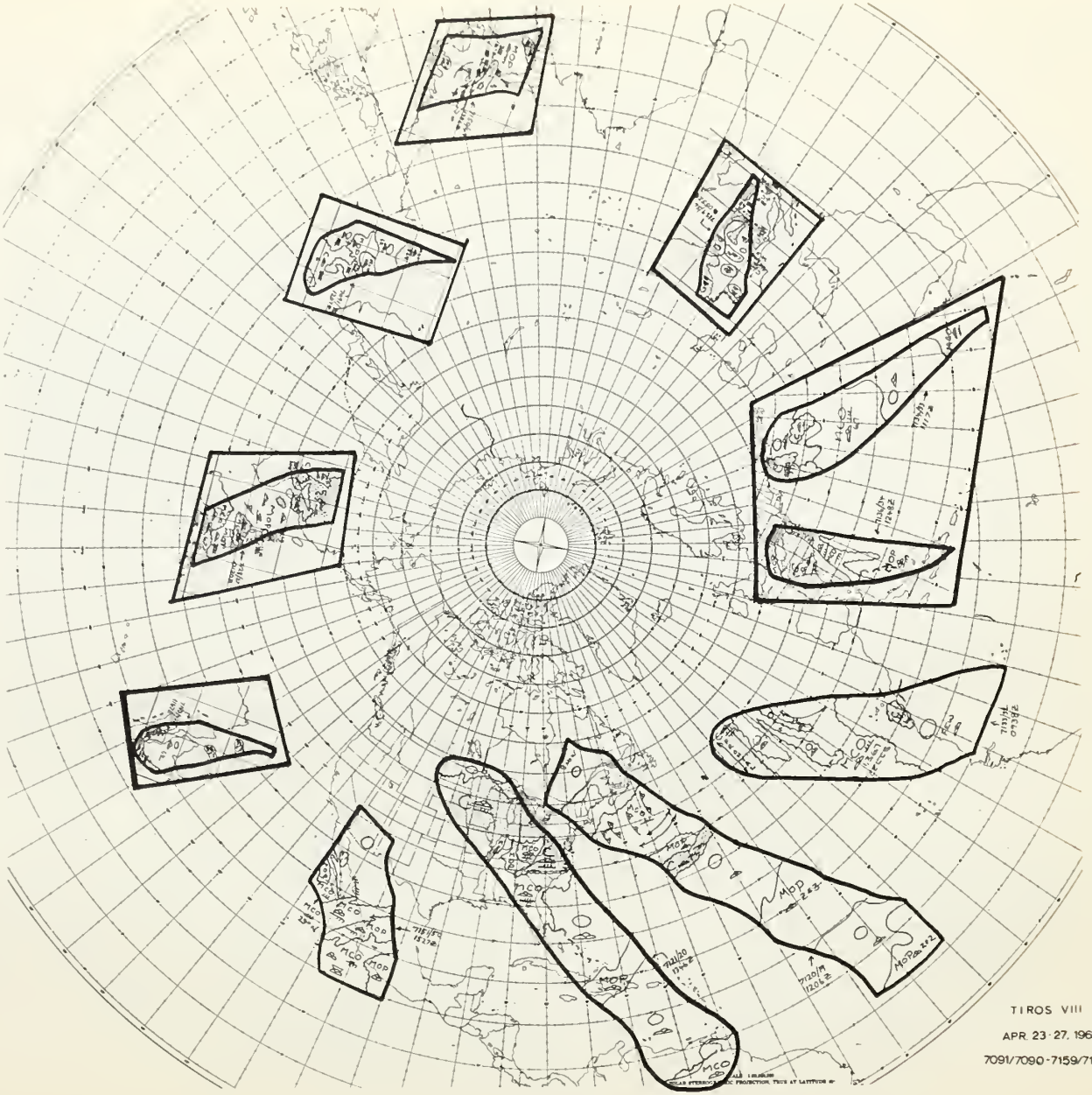
APR 22, 1965

7077/7076 - 7079/7078



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APR. 23-27, 1965

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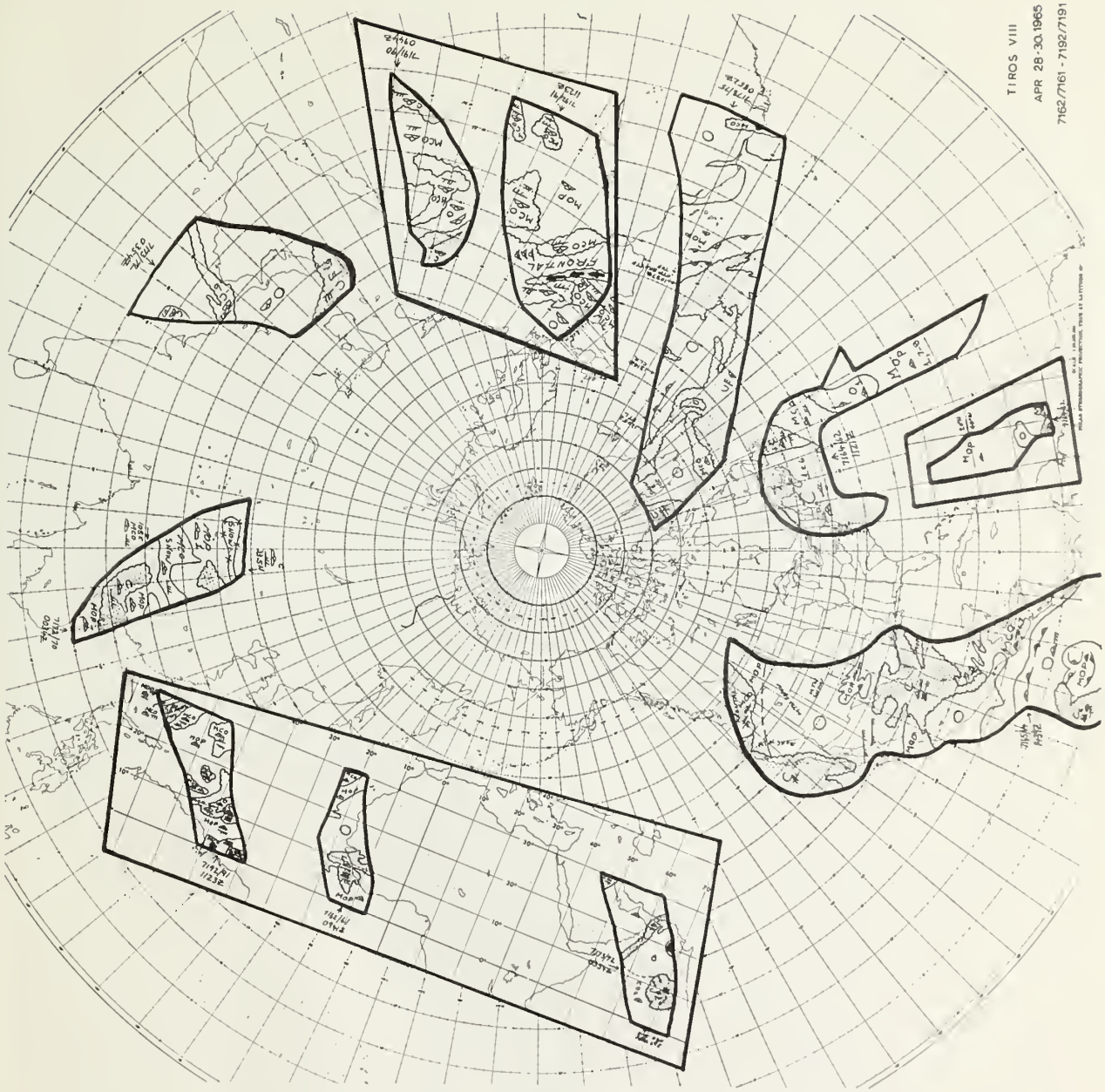

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